SBM-1

SERVICE MANUAL

US Mode
Canadian Mode
AEP Mode
UK Mode
E Mode

SPECIFICATIONS

System

Super bit mapping system

Sampling frequency

48 kHz, 44.1 kHz, 32 kHz*
(selectable)

* SBM (super bit mapping) process does not work at 32 kHz.

Total signal-to-noise-ratio (1 kHz IHF-A, Fs= 48 kHz)

MIC (Phone plug):
more than 60 dB (MIC: –60 dBs / TCD-D7 LINE OUT: +8.2 dBs)

LINE:
more than 90 dB (LINE IN: –3.8 dBs / TCD-D7 LINE OUT: +8.2 dBs)
(0 dBs = 0.775 V)

Total harmonic distortion (1 kHz, 22 kHz LPF, Fs= 48 kHz)

MIC (Phone plug):
less than 0.16 % (MIC: –60 dBs / TCD-D7 LINE OUT: +8.2 dBs)

LINE:
less than 0.008 % (LINE IN: –3.8 dBs / TCD-D7 LINE OUT: +8.2 dBs)

Frequency response

MIC (Phone plug):
Fs 48 kHz 60 — 22,000 Hz (±1.5 dB)
Fs 44.1 kHz 60 — 20,000 Hz (±1.5 dB)
Fs 32 kHz 60 — 14,500 Hz (±1.5 dB)

LINE IN:
Fs 48 kHz 20 — 22,000 Hz (±1.0 dB)
Fs 44.1 kHz 20 — 20,000 Hz (±1.0 dB)
Fs 32 kHz 20 — 14,500 Hz (±1.0 dB)

Outputs

REC MONITOR (Stereo minijack)
Impedance: 32 ohms
Maximum output level:
5 mW + 5 mW

DIGITAL OUT (Special 7-pin cable, special 7-pin jack)

—continued on next page—

MICROFILM

SUPER BIT MAPPING ADAPTO

SONY

Inputs

MIC (Phone plug)
- Rated input: –60 dBs (0.775 mV)
- Minimum input: –75 dBs (0.14 mV)

MIC (Stereo minijack)
- Rated input: –60 dBs (0.775 mV)
- Minimum input: –73 dBs (0.17 mV)

LINE IN (Phono jack)
- Rated input: –3.8 dBs (500 mV)
- Minimum input: –22 dBs (62 mV)
- Impedance: 47 kilohms

DIGITAL IN (Special 7-pin cable, special 7-pin jack)

General

Power requirements
- DC 6 V four size AA (LR6) batteries
- AC power adaptor for use on 120 V AC, 60 Hz (for USA and Canadian models) / for use on 240 V AC, 50 Hz (for UK model)

Battery life (measured at 20 °C)
- Approx. 2 hours (Sony dry batteries LR6/AM3(N))

Power consumption

- 2 W

Dimension

Approx.
- 136 × 29.4 × 89 mm (5 3/8 × 1 3/16 × 3 5/8 in.)
- (w/h/d) incl. projecting parts and controls, not incl. cables

Mass

Approx.
- 200 g (7 oz.)
- 280 g (10 oz.) incl. batteries

Accessories supplied

Carrying case (1)
AC power adaptor (AC-MZ60) (1)
Operating instructions (1)

Design and specifications are subject to change without notice.

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Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

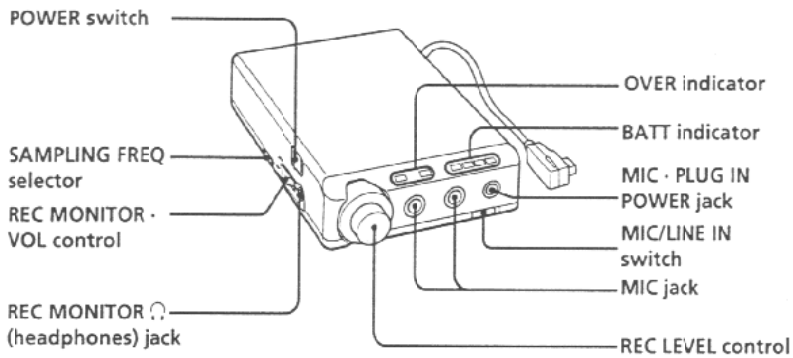
SAFETY-RELATED COMPONENT WARNING!!

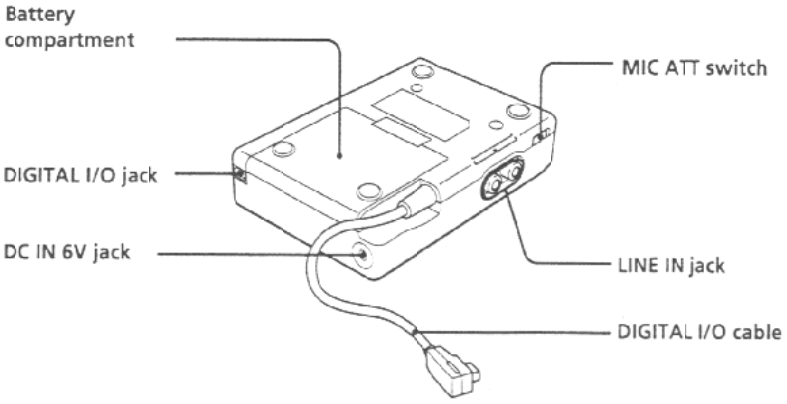
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

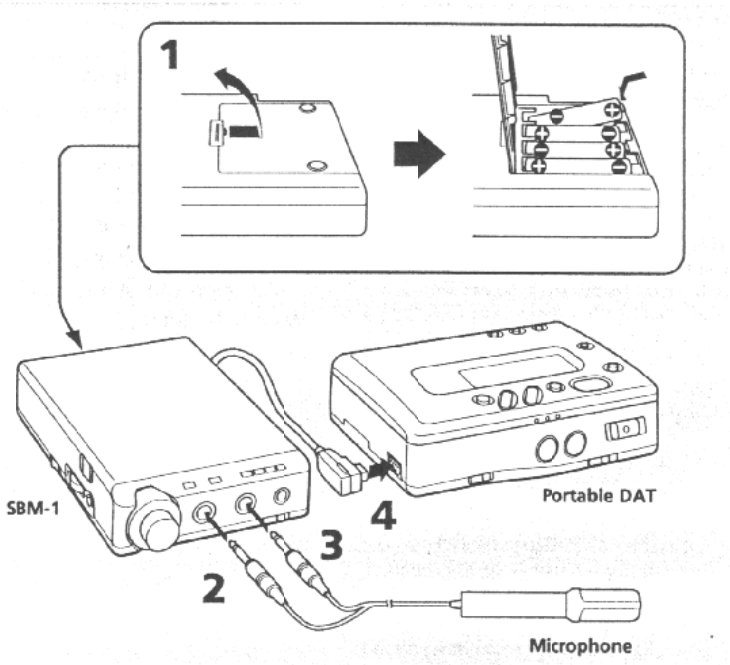
Identifying the Parts and Controls





Recording through a Microphone to a Portable DAT

Setting up



1 **Insert four size AA(R6) alkaline batteries with the correct polarity.**

2 **Connect a microphone.**

If the microphone has a power switch, turn it on. Hum or noise may be generated or recorded on your tape if the power is turned off.

3 **Set MIC/LINE IN switch to MIC.**

4 **Connect a portable DAT.**

This section is extracted from instruction manual.

Other operations

To turn off the power

Keep sliding POWER until BATT indicator goes off.

When OVER L/R indicator lights up

The recording level is set too high. Lower the level in order to avoid distortion of the recorded sound. When you record loud sound, turn MIC ATT (microphone attenuator) switch to 20 dB. Normally set the switch to 0 dB.

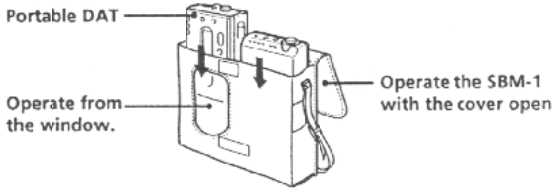
To monitor the sound

Connect headphones to REC MONITOR🎧 jack. You can monitor the sound output from the SBM-1. You cannot monitor the sound being recorded.

EN

Using supplied carrying case

Insert each piece of equipment as illustrated below.

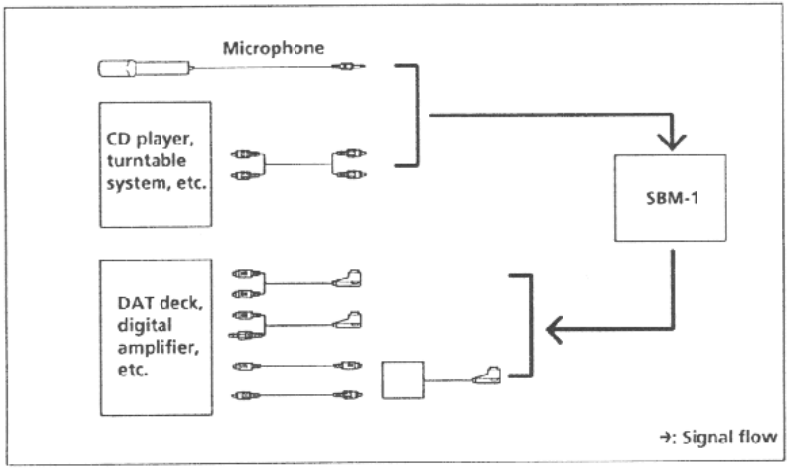


When recording relatively quiet sound, lower the recording level and move the microphone as close as possible to the source. You should be able to make a clear recording with the least amount of noise.

When you record with long play mode, it is useful to set the sampling frequency to 32 kHz. In this case, even though the SBM (super bit mapping) process does not work, you can use the SBM-1 as a microphone amplifier.

Using Optional Components

You can also record to a DAT deck, etc.
Connect it to DIGITAL I/O jack on the side of SBM-1 with a digital cable or adaptor kit.



Note

When both MIC L/MONO and MIC R jacks, and MIC PLUG IN POWER jack are connected, the former has priority over the latter.

When you connect the microphone with plug-in-power, you don't need to supply any power sources. The power is supplied from SBM-1 through the plug.

1 Connect an input source to SBM-1.

When you connect a microphone

- When you connect a stereo microphone with phone plugs, connect the microphone to MIC L/MONO and MIC R. For monaural recording, connect the microphone to MIC L/MONO.
- When you connect a microphone with stereo mini-plug (ECM-959A, ECM-737, etc, optional), connect the microphone to MIC PLUG IN POWER.
- Turn on the power of the microphone if it has a power switch.
- Set MIC/LINE IN switch to MIC on the side of SBM-1.

When you connect audio equipment

- Connect the equipment to LINE IN on the rear of SBM-1 (using with RK-C710HS (1m, optional), etc.).
- Set MIC/LINE IN switch to LINE IN on the side of SBM-1.

Notes

- Connect the input/output jacks of the POC-DA12/-DA12M optional cable to the output equipment with the correct jack, for each jack is a different shape.
- Make sure that the switch on the connecting cable is set to DIGITAL position before you start recording.

By connecting the adaptor kit RM-D3K, you can use cables that have rectangular optical jacks, or coaxial-digital phono jacks on both ends. You can also remotely control the equipment with the remote controller supplied with RM-D3K.

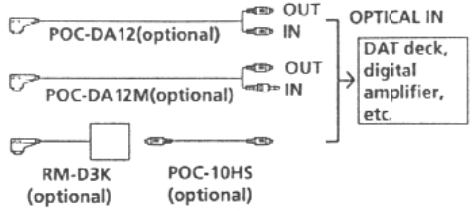
Note

Be sure not to change the SAMPLING FREQ selector setting during recording. Otherwise, noise may be generated or recorded on your tape.

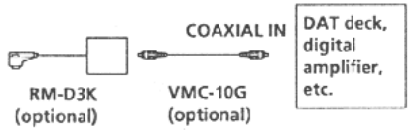
* SBM (super bit mapping) process does not work if you select 32 kHz. In this case, you can use the SBM-1 only as microphone amplifier.

2 Choose the cable according to the jack type of the output equipment as listed below, and connect it to SBM-1.

Rectangular optical jack:
Connect the cable to the OPTICAL IN (optical input) jack of a DAT deck, digital amplifier, etc.



Phono jack with coaxial digital:
Connect the cable to the COAXIAL IN (digital input) jack of a DAT deck, digital amplifier, etc.



3 Set the SAMPLING FREQ selector to 48 kHz, 44.1 kHz or 32 kHz*.

4 Turn on the power.

5 Turn REC LEVEL L/R so that the volume of output equipment will usually be around –12dB, and not exceed 0 dB even if loud sound is input.

To adjust the recording level, refer to the OVER L/R indicator on the SBM-1 because the OVER L/R indicator of output equipment may not lights even if loud sound is input.

If you use SBM-1 with the power turned off, the input digital sound is output to the recording components directly. In this case, SBM (super bit mapping) process does not work.

6 Start recording.

▶ *For Your Information*

Guide to the Serial Copy Management System

Digital audio equipment such as CDs, MDs, DATs, etc., copy music easily with high quality, for these products process music as a digital signal. The Serial Copy Management System allows you to make only a single copy of a recorded digital source through a digital-to-digital connections because music programs may be copyrighted.

This system is applied to the digital audio equipment when SBM-1 is used as the adaptor during recording.

An outline of this system appears below:

You can make only a first-generation copy* through a digital-to-digital connection.

1 You can make a copy of a digital sound program on the market such as CDs, MDs, etc., but you cannot make a second copy from the first-generation copy.

2 You can make a copy of a digital signal, which is a digitaly recorded analog sound program on the market such as analog record, music cassette tape, etc., or digital satellite broadcasts, but you cannot make a second copy.

* Copy is a digital recording of a digital signal made on digital audio equipment through a digital-to-digital connection.

Note

No restrictions apply when a digital signal is recorded as an analog signal through an analog-to-analog connection on digital audio equipment.

What is the SBM?

During analog recording, the SBM function lowers noise within the frequency band in which the human ear is most receptive to noise, thereby, sharply expanding the auditory dynamic range of the recorded signal.

High-precision pulse A/D converter

The SBM-1 uses a pulse A/D converter and decimation filter to convert an analog signal into a quantized 24-bit digital signal. DAT, like CDs, uses 16-bit quantization, and thus the 8-bit difference results in more precise quantization, more signal information and less quantizing noise than 16-bit quantization. During conversion of the 24-bit data to a 16-bit recording signal, the SBM function boosts sound quality by reintegrating into the 16-bit signal high-end 4 bits out of 8 bits signal information that until now have been lost.

Applying the principle of human hearing

The SBM function applies the principle of human hearing in the reintegration of signal information. The auditory range of the human ear is generally considered to be 20 Hz to 20 kHz; hearing sensitivity, however, shows greater sensitivity to the range between 3 kHz and 4 kHz, and lower sensitivity to frequencies above and below this range (see Fig.A). This principle applies also to quantizing noise as well. By reducing quantizing noise in this particular range, signals can be recorded to produce more expansive sound than is possible by a uniform reduction of noise over the entire audible range.

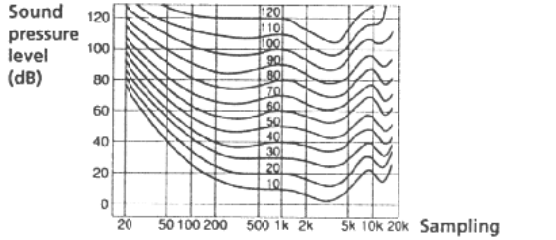


Fig.A

EN

Noise-shaping filter

The SBM function uses a noise-shaping filter (see Fig.B) with a frequency response similar to that of the human ear to reduce quantizing noise within the most sensitive frequency range, and to feed back the quantizing error (that is normally lost) back to the input signal, re-integrating the low-end bit information with the high-end bit information (see Fig.B).

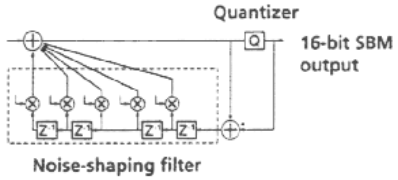


Fig.B

The improvement in noise level for frequency range lower than 3 kHz exceeds 10 dB when the SBM is activated.

The SBM function operates only when recording analog sound. The function does not operate when digital sound is input.

What is the sampling frequency?

Digital audio equipment exchanges the input sound for numbers (0 or 1), and records the numbers as input data. Sampling frequency is the rule for the exchange. For example, if the sampling frequency is 32 kHz, it means that one second's sound is divided into 32,000, then each sound is exchanged for numbers (0 or 1).

If the connected components have different sampling frequencies, they cannot "read" each other's data. That is why you must set the SAMPLING FREQ selector on the SBM-1 to the same frequency as the connected recorder.

The major sampling frequencies of digital audio equipment are shown below:

Audio equipment	Sampling frequency
DAT recorder	48 kHz, 44.1 kHz or 32 kHz*
CD player	44.1 kHz
MD recorder	44.1 kHz
NT recorder	32 kHz*

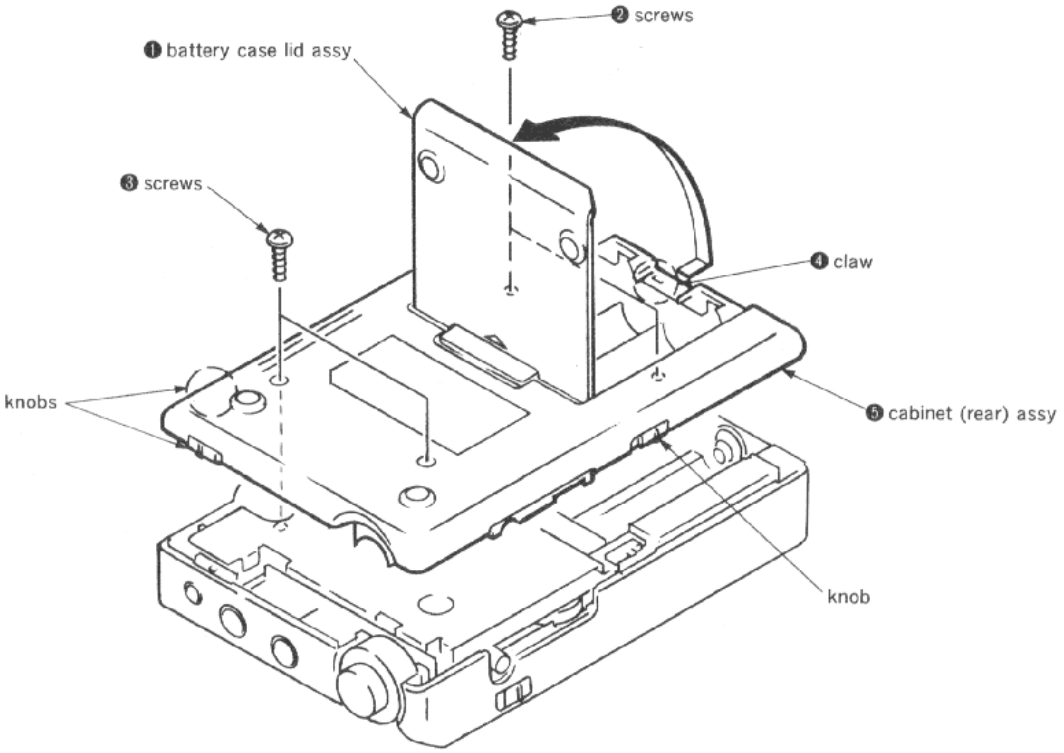
* SBM (super bit mapping) process does not work at 32 kHz.

SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

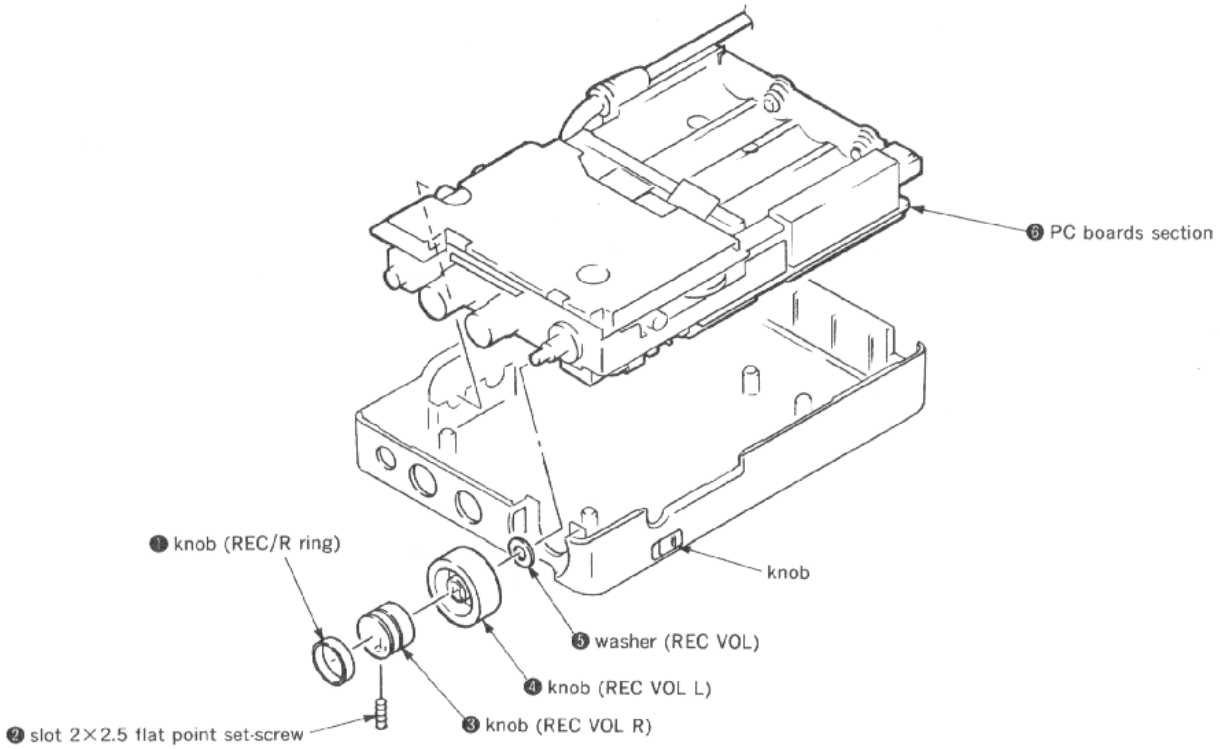
2-1. CABINET (REAR) ASSY

Note : On installation, set the each knobs to switches.

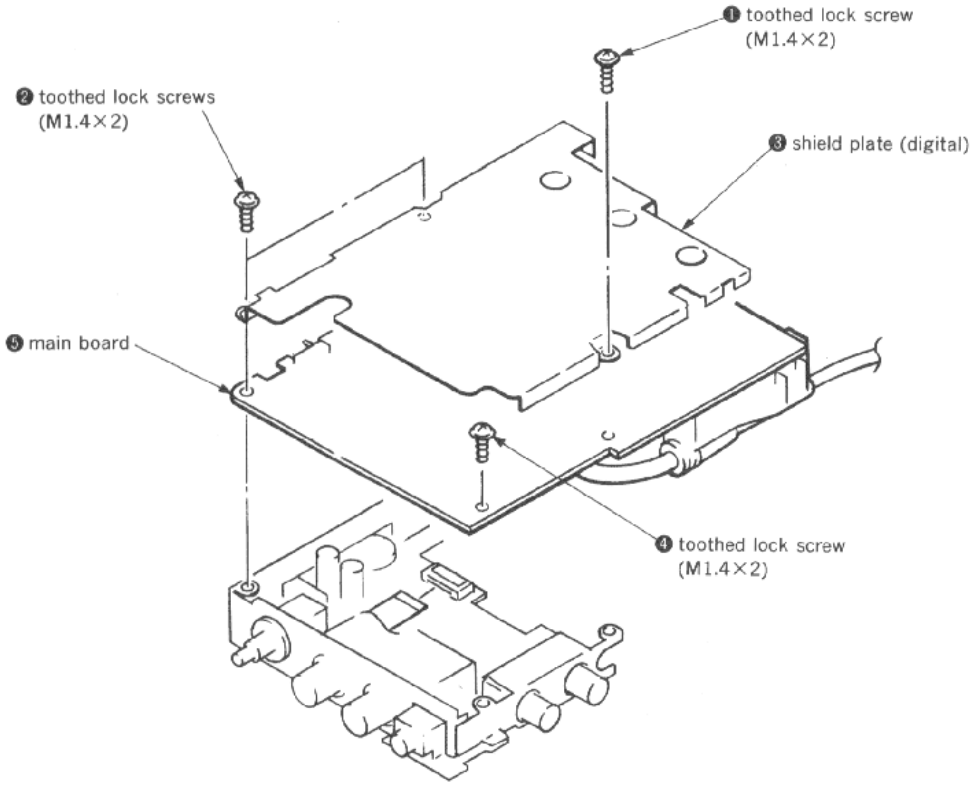


2-2. PC BOARDS SECTION

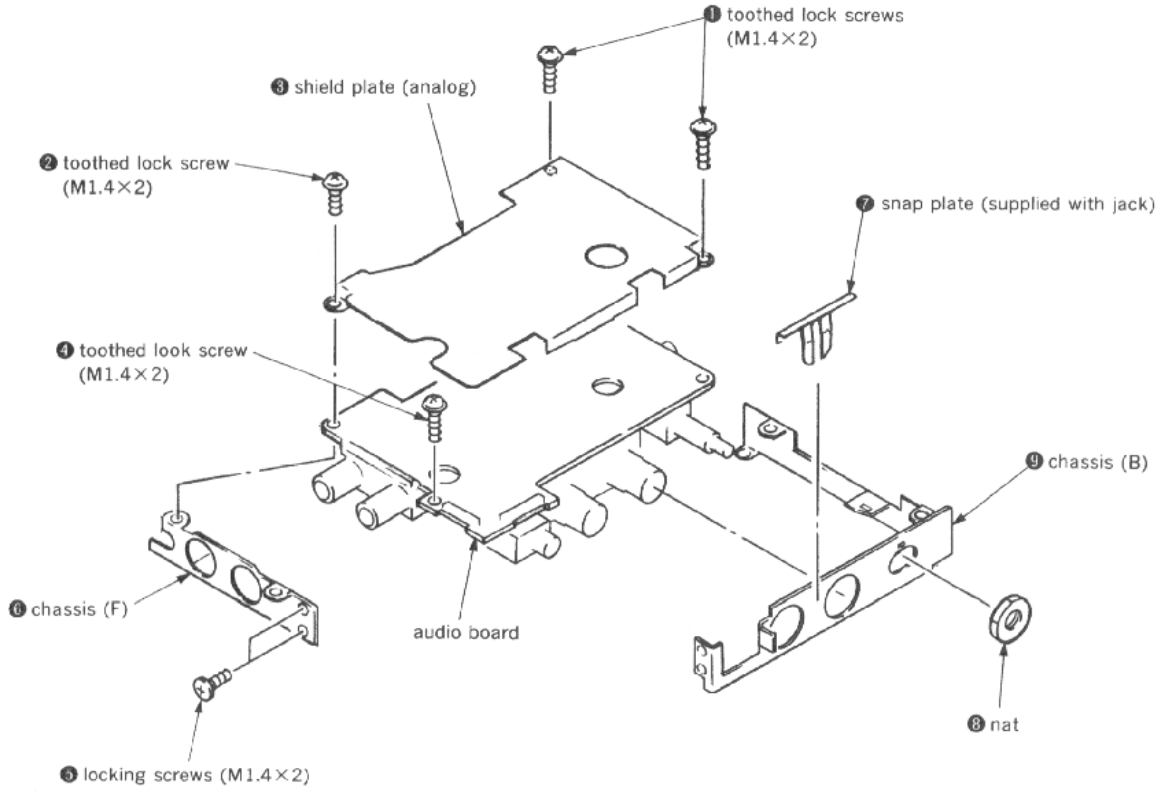
Note : On installation, set the each knobs to switches.



2-3. MAIN BOARD

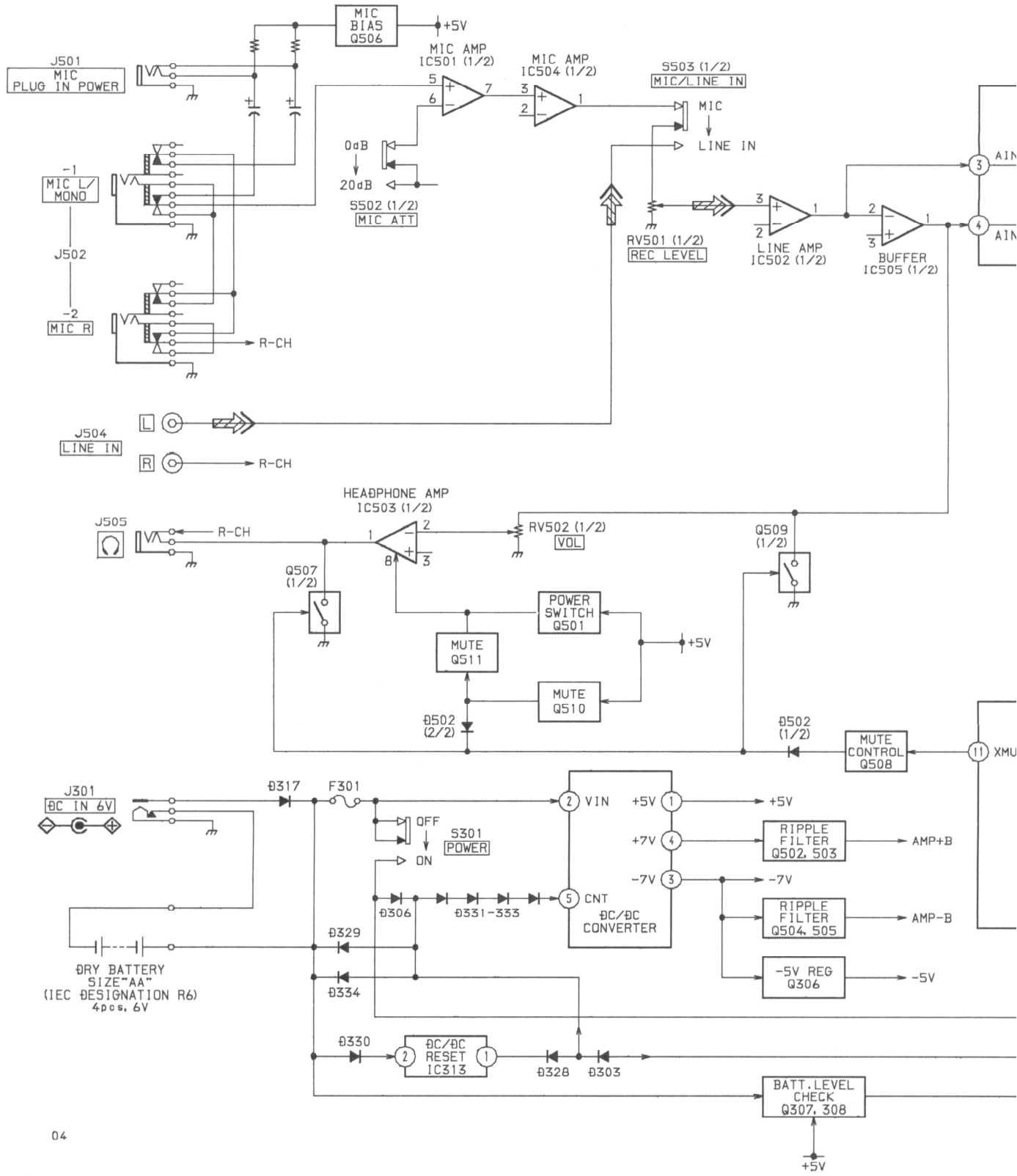


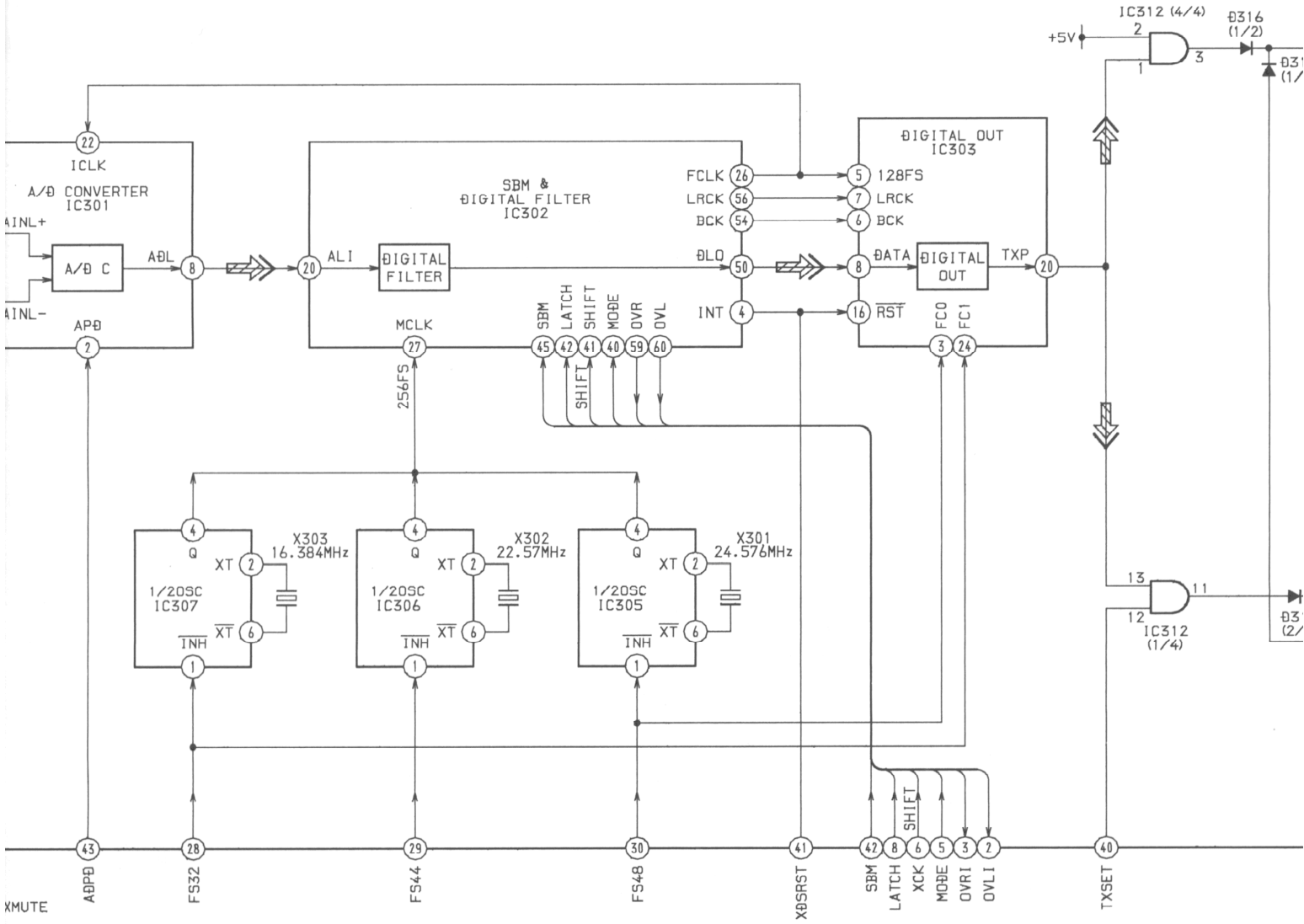
2-4. AUDIO BOARD



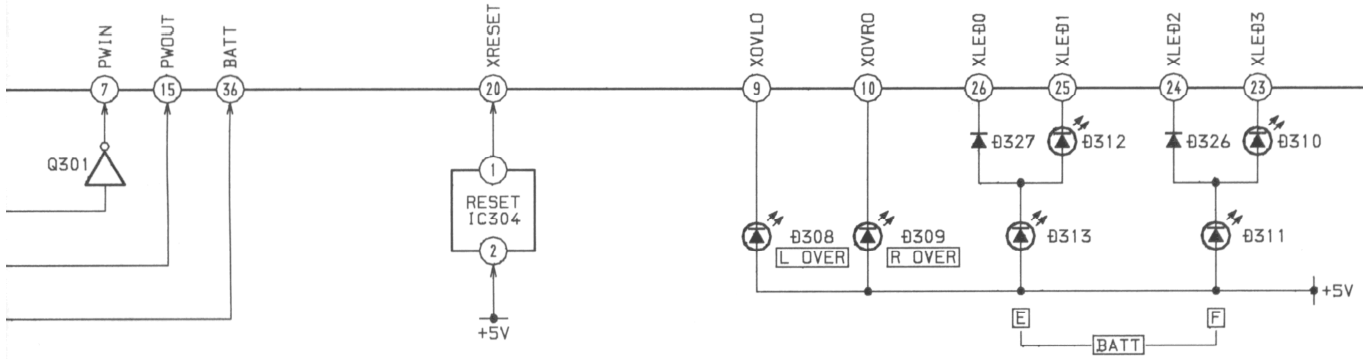
SECTION 3
DIAGRAMS

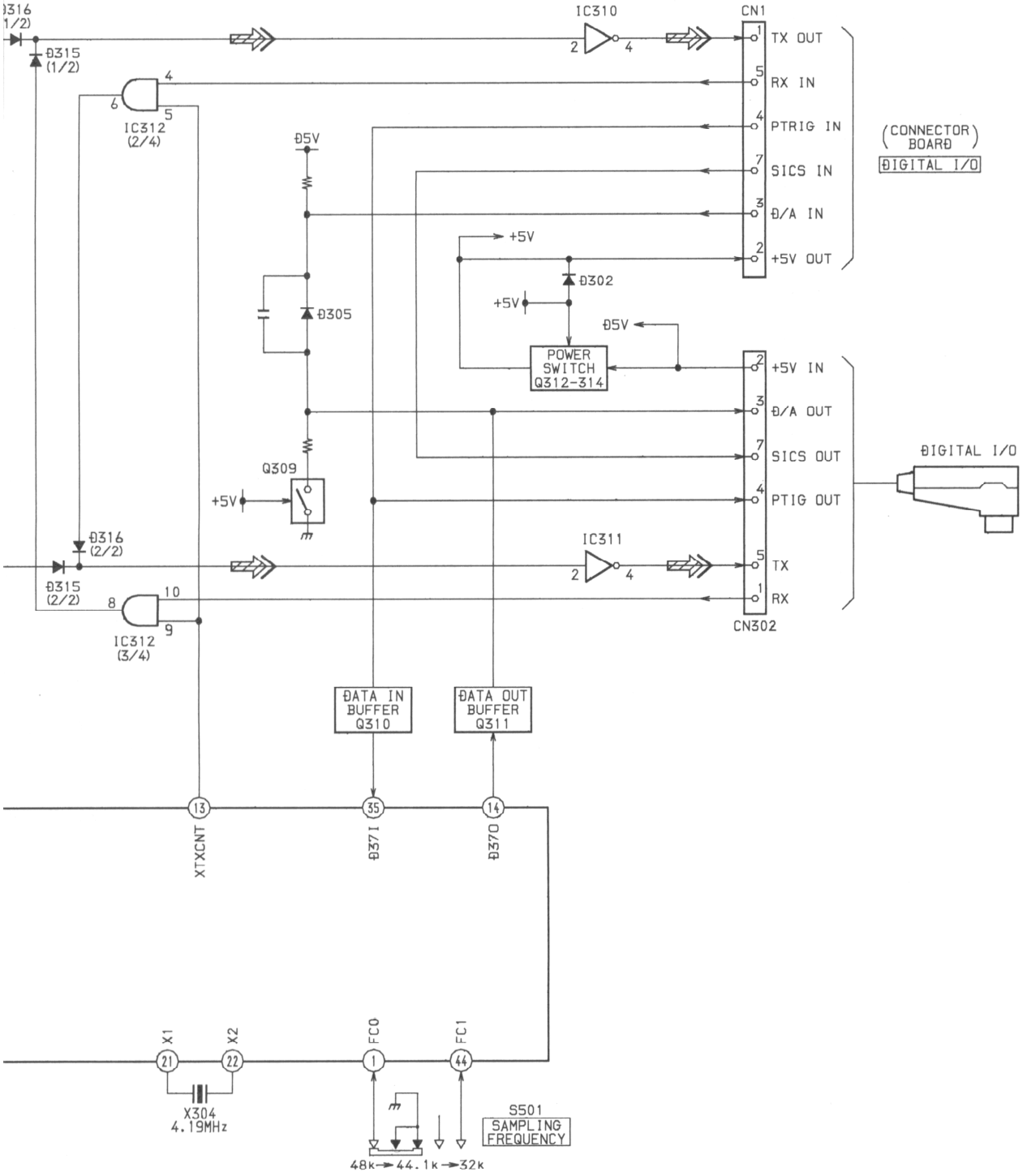
3-1. BLOCK DIAGRAM





SYSTEM CONTROL
IC309





・Signal path

⇛ : ĐIGITAL OUT

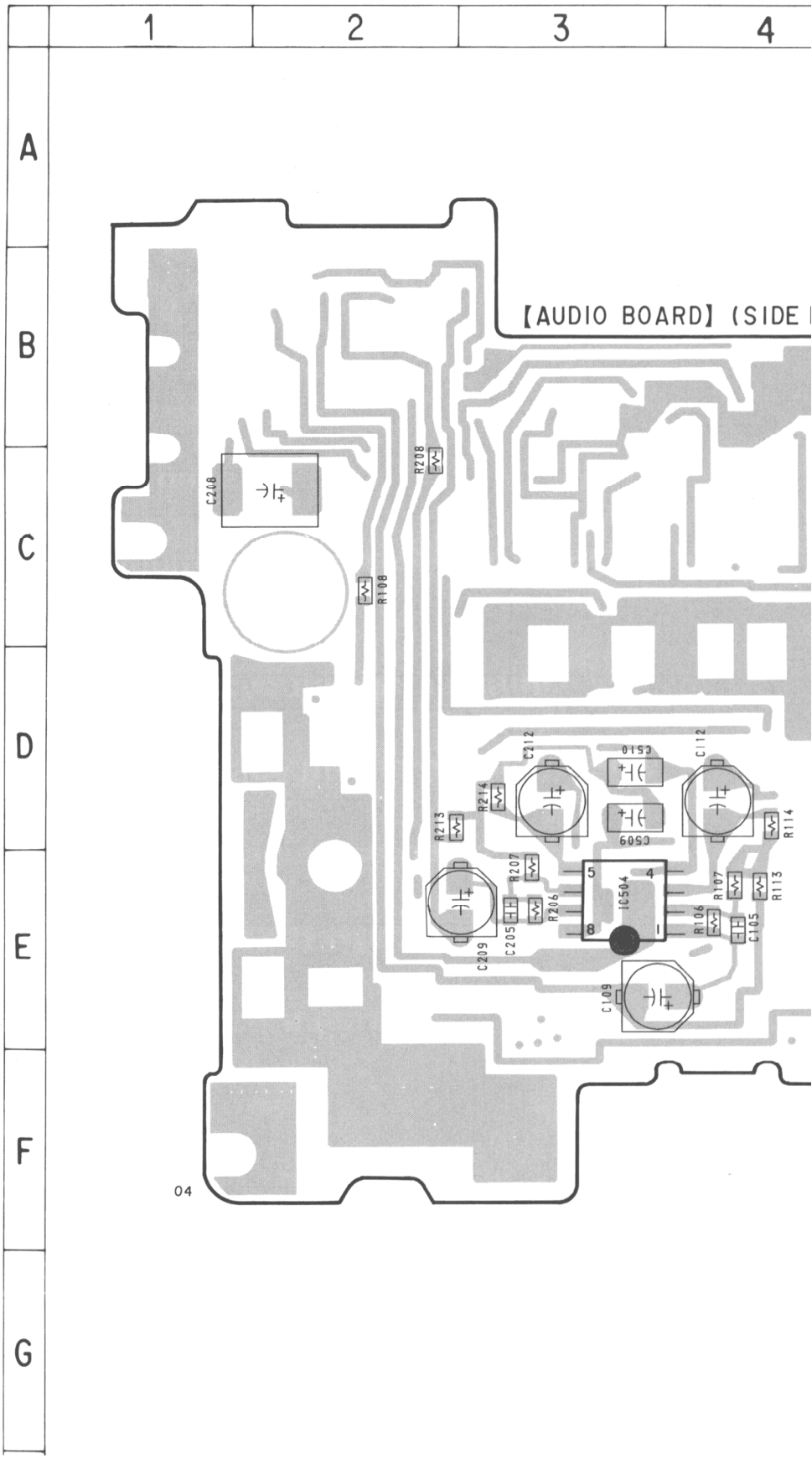
3-2. PRINTED WIRING BOARD—AUDIO SECTION—

• **Semiconductor Location**

Ref. No.	Location
D501	E-5
D502	E-10
IC501	D-13
IC502	D-10
IC503	E-9
IC504	E-3
IC505	E-11
Q501	F-10
Q502	E-13
Q503	E-13
Q504	E-12
Q505	E-12
Q506	E-14
Q507	C-7
Q508	F-10
Q509	E-10
Q510	D-5
Q511	E-6

Note :

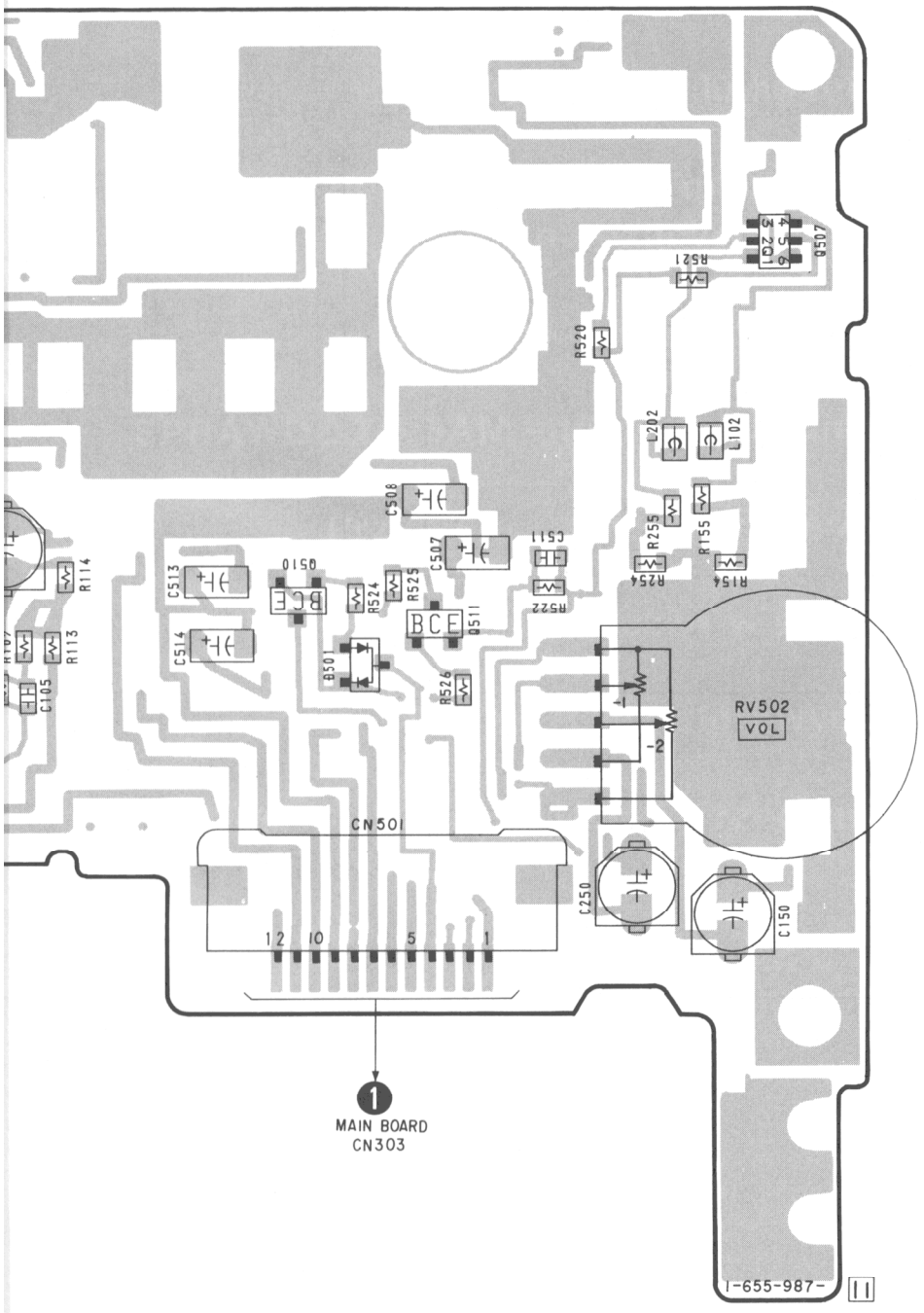
- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.
  (The other layer's patterns are not indicated.)

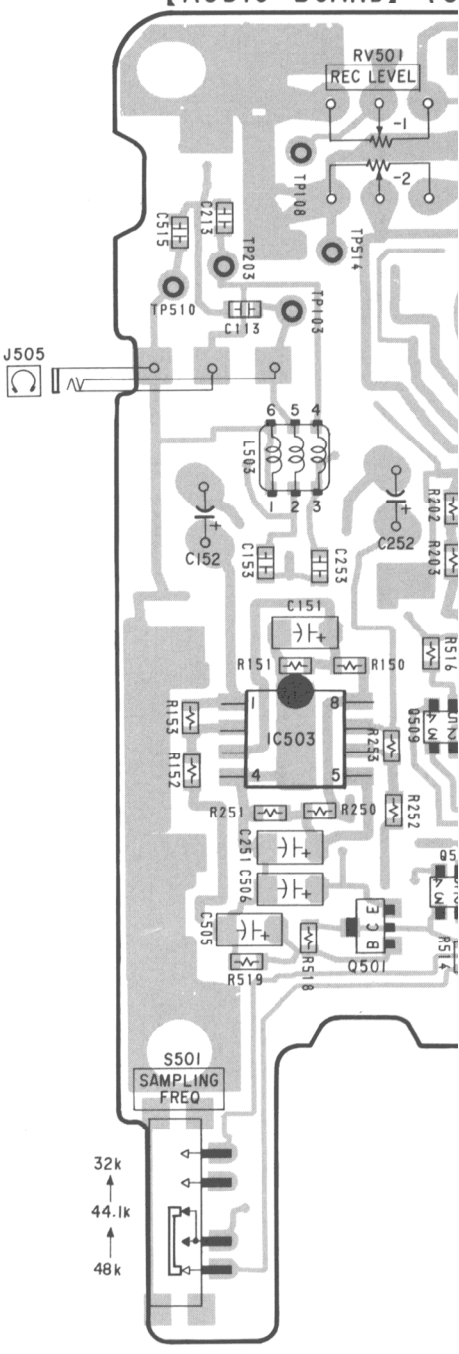


4	5	6	7	8	9	10

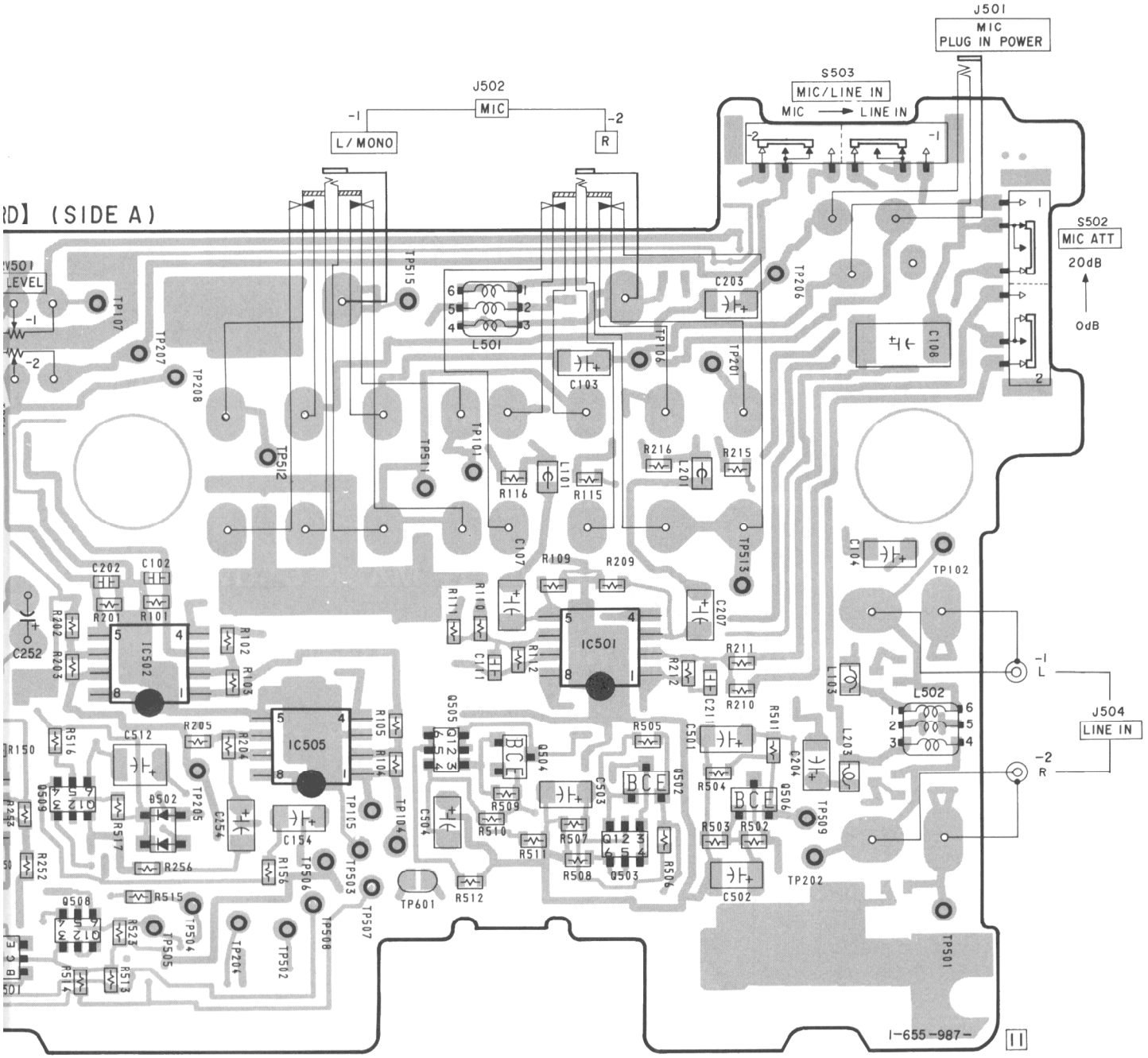
(SIDE B)

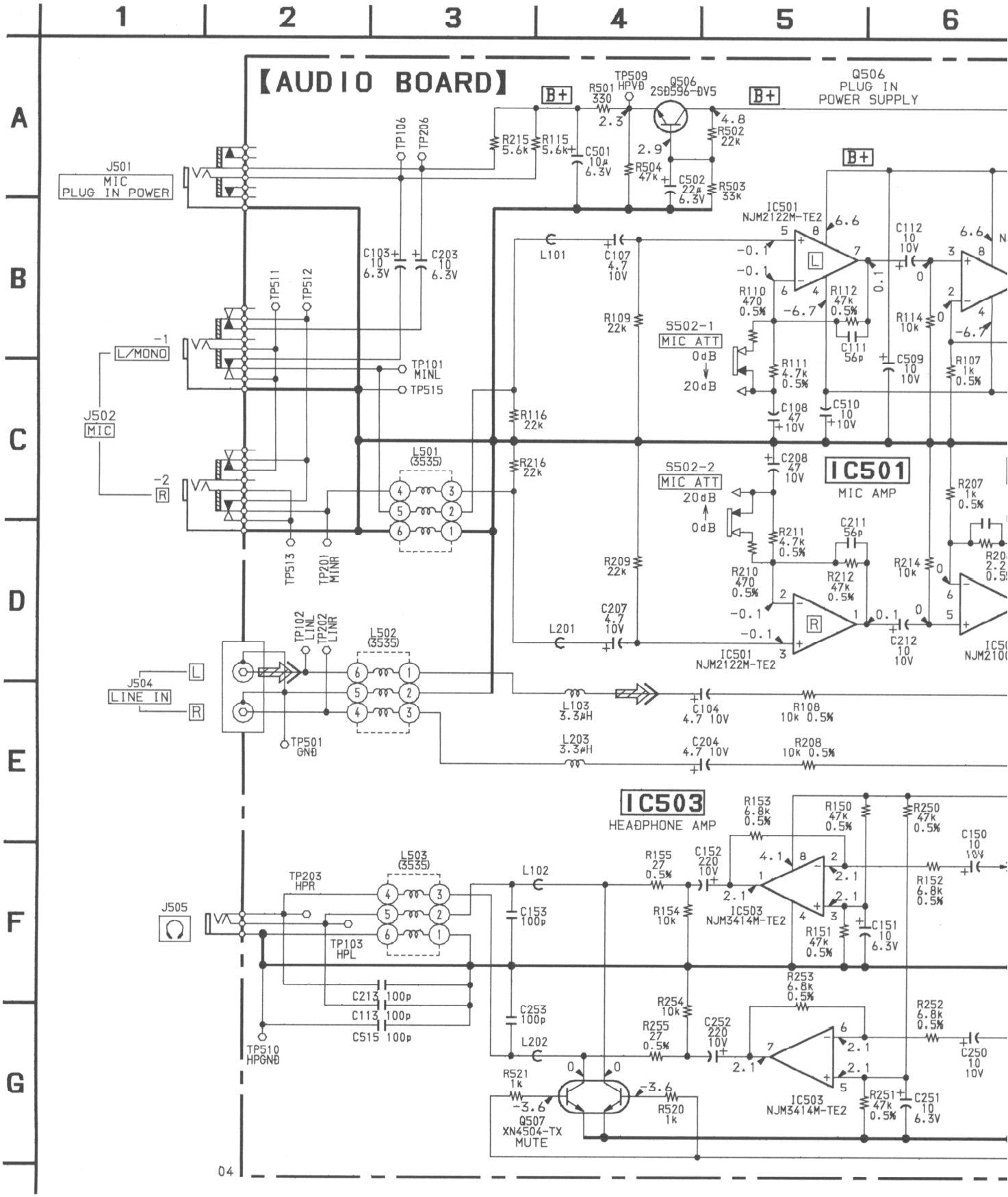
【AUDIO BOARD】 (S

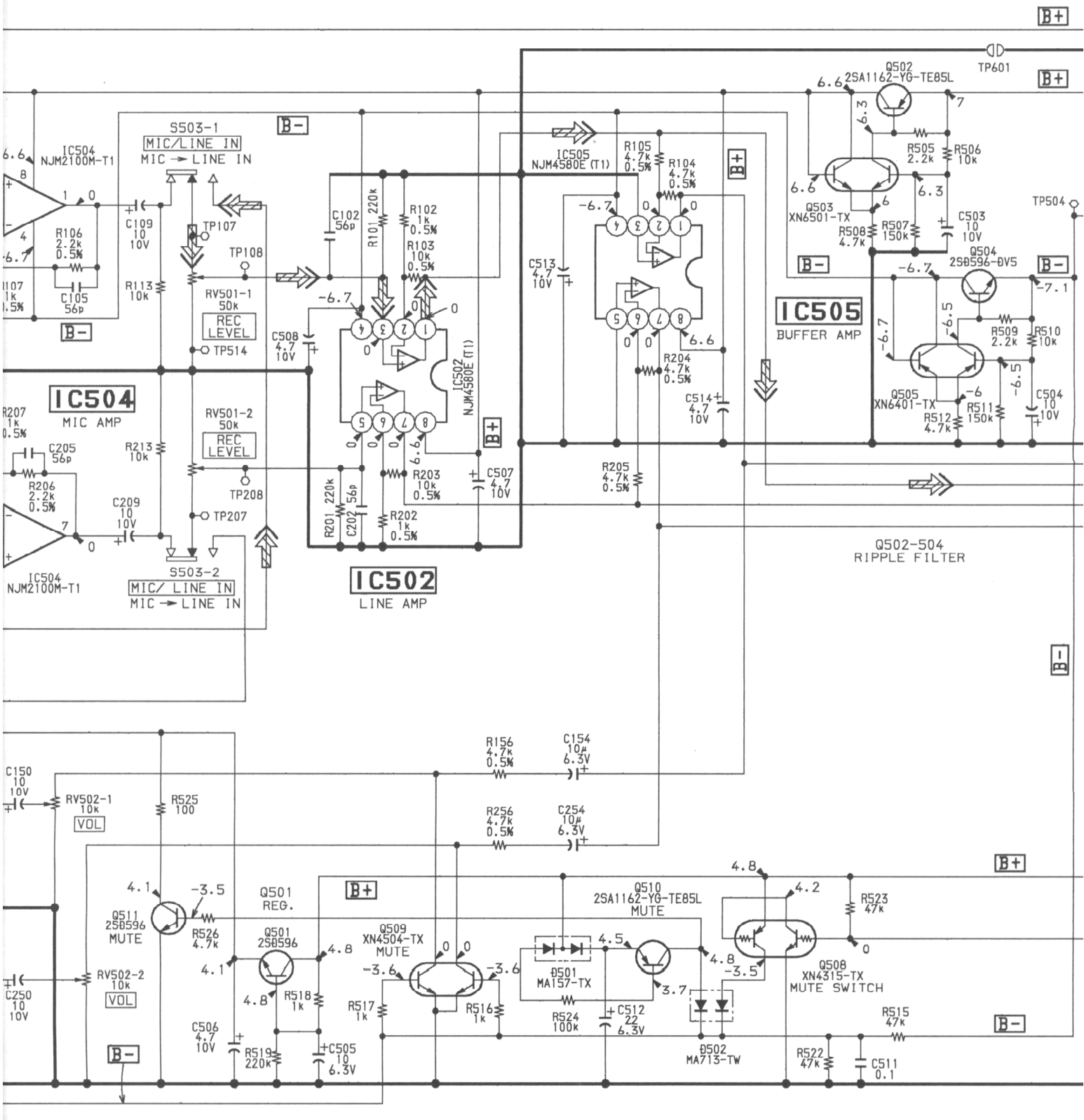


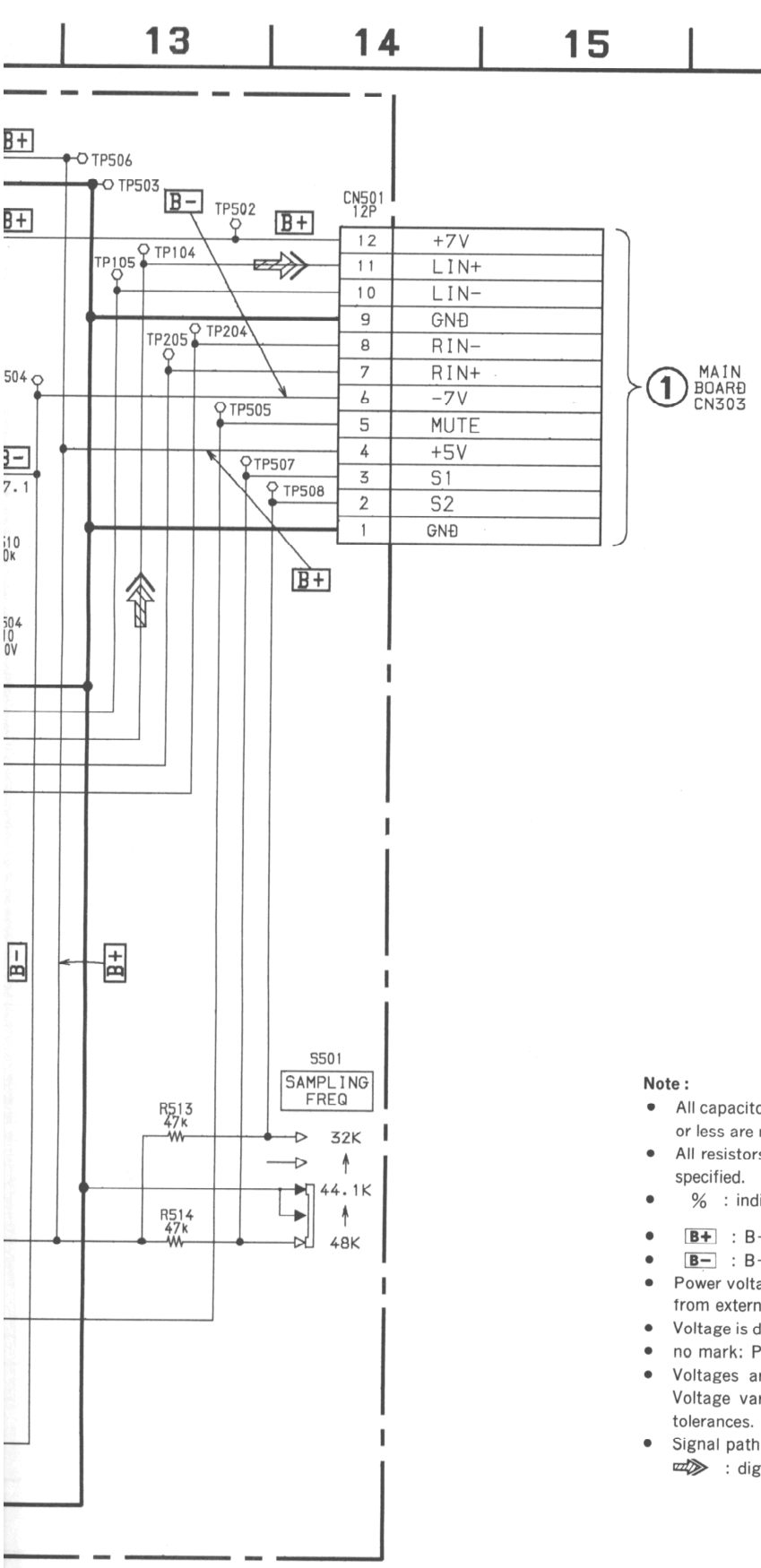


10	11	12	13	14	15




【AUDIO BOARD】
1
2
3
4
5
6
A
B
C
D
E
F
G
J501
MIC
PLUG IN POWER
J502
MIC
L/MONO
R
J504
LINE IN
J505
TP106
TP206
TP511
TP512
TP101
MINL
TP515
TP513
TP201
MINR
TP102
LINL
TP202
LINR
TP501
GND
TP203
HPR
TP103
HPL
TP510
HPGND
L501
(3535)
L502
(3535)
L503
(3535)
L101
L102
L103
3.3μH
L201
L202
L203
3.3μH
R501
330
TP509
HPVD
Q506
2SD596-DV5
Q506
PLUG IN
POWER SUPPLY
B+
R215
5.6k
R115
5.6k
C501
10μ
6.3V
R504
47k
C502
22μ
6.3V
R503
33k
R502
22k
C103
10
6.3V
C203
10
6.3V
C107
4.7
10V
R109
22k
R116
22k
R216
22k
R209
22k
C207
4.7
10V
S502-1
MIC ATT
0dB
20dB
S502-2
MIC ATT
20dB
0dB
IC501
NJM2122M-TE2
MIC AMP
R110
470
0.5%
R112
47k
0.5%
C111
56p
R111
4.7k
0.5%
C108
47
10V
C510
10
10V
C112
10
10V
C509
10
10V
R114
10k
R107
1k
0.5%
C208
47
10V
C211
56p
R211
4.7k
0.5%
R210
470
0.5%
R212
47k
0.5%
R214
10k
R207
1k
0.5%
C212
10
10V
C104
4.7 10V
R108
10k 0.5%
C204
4.7 10V
R208
10k 0.5%
IC503
HEADPHONE AMP
IC503
NJM3414M-TE2
R153
6.8k
0.5%
R150
47k
0.5%
R250
47k
0.5%
C150
10
10V
R152
6.8k
0.5%
R155
27
0.5%
C152
220
10V
R154
10k
R151
47k
0.5%
C151
10
6.3V
C153
100p
C213
100p
C113
100p
C515
100p
C253
100p
R253
6.8k
0.5%
R254
10k
R255
27
0.5%
C252
220
10V
R252
6.8k
0.5%
C250
10
10V
R251
47k
0.5%
C251
10
6.3V
R521
1k
Q507
XN4504-TX
MUTE
R520
1k
04

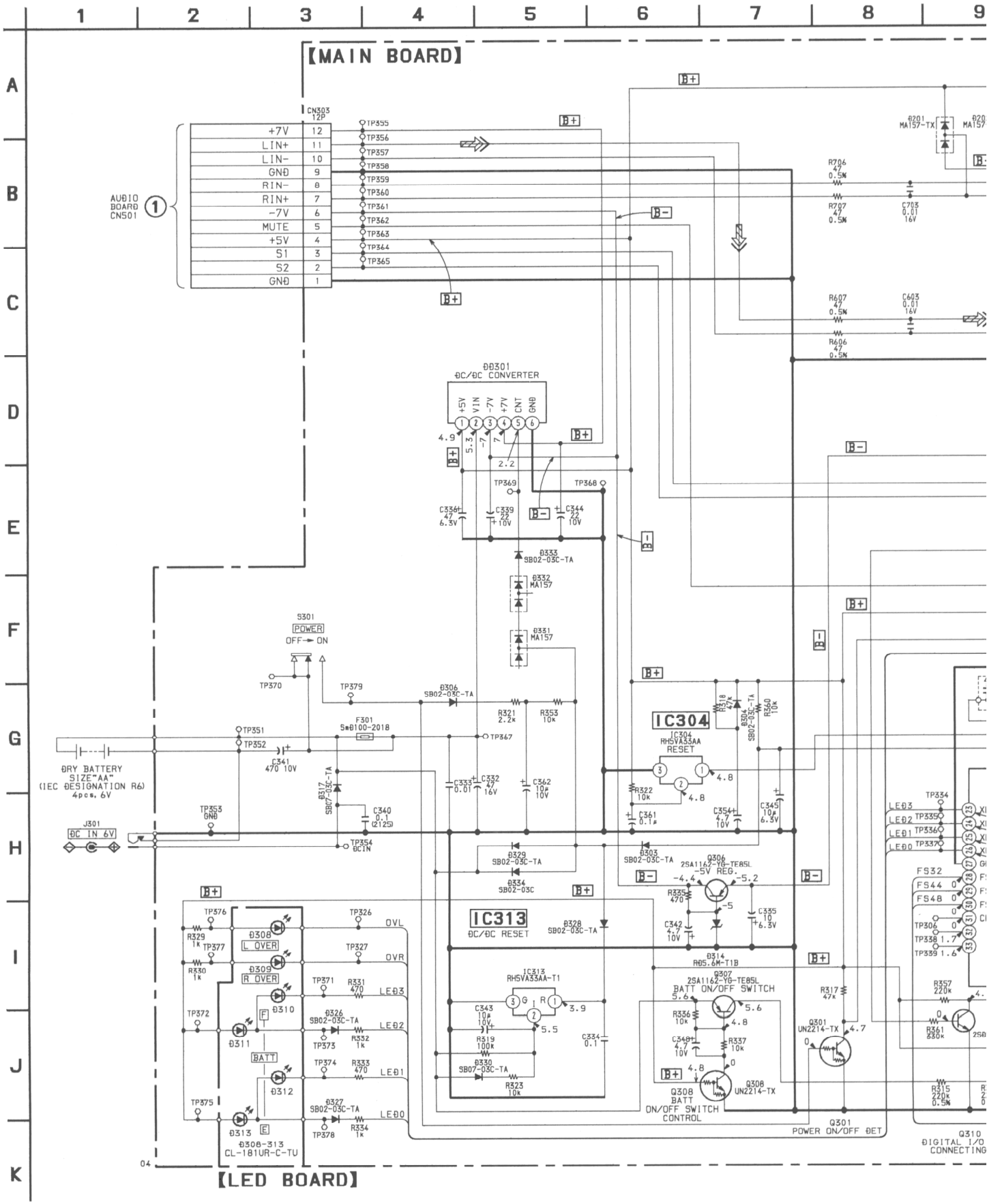

7
8
9
10
11
12
B+
B-
TP601
Q502
2SA1162-YG-TE85L
IC504
NJM2100M-T1
S503-1
MIC/LINE IN
MIC → LINE IN
TP107
TP108
RV501-1
50k
REC
LEVEL
TP514
IC504
MIC AMP
RV501-2
50k
TP208
TP207
S503-2
MIC/ LINE IN
IC502
LINE AMP
IC505
NJM4580E (T1)
IC505
BUFFER AMP
Q503
XN6501-TX
Q504
2SB596-BV5
Q505
XN6401-TX
TP504
Q502-504
RIPPLE FILTER
Q501
REG.
Q501
2SB596
Q509
XN4504-TX
MUTE
Q510
2SA1162-YG-TE85L
MUTE
Q511
2SB596
MUTE
Q508
XN4315-TX
MUTE SWITCH
D501
MA157-TX
D502
MA713-TW
RV502-1
10k
VOL
RV502-2
10k
VOL

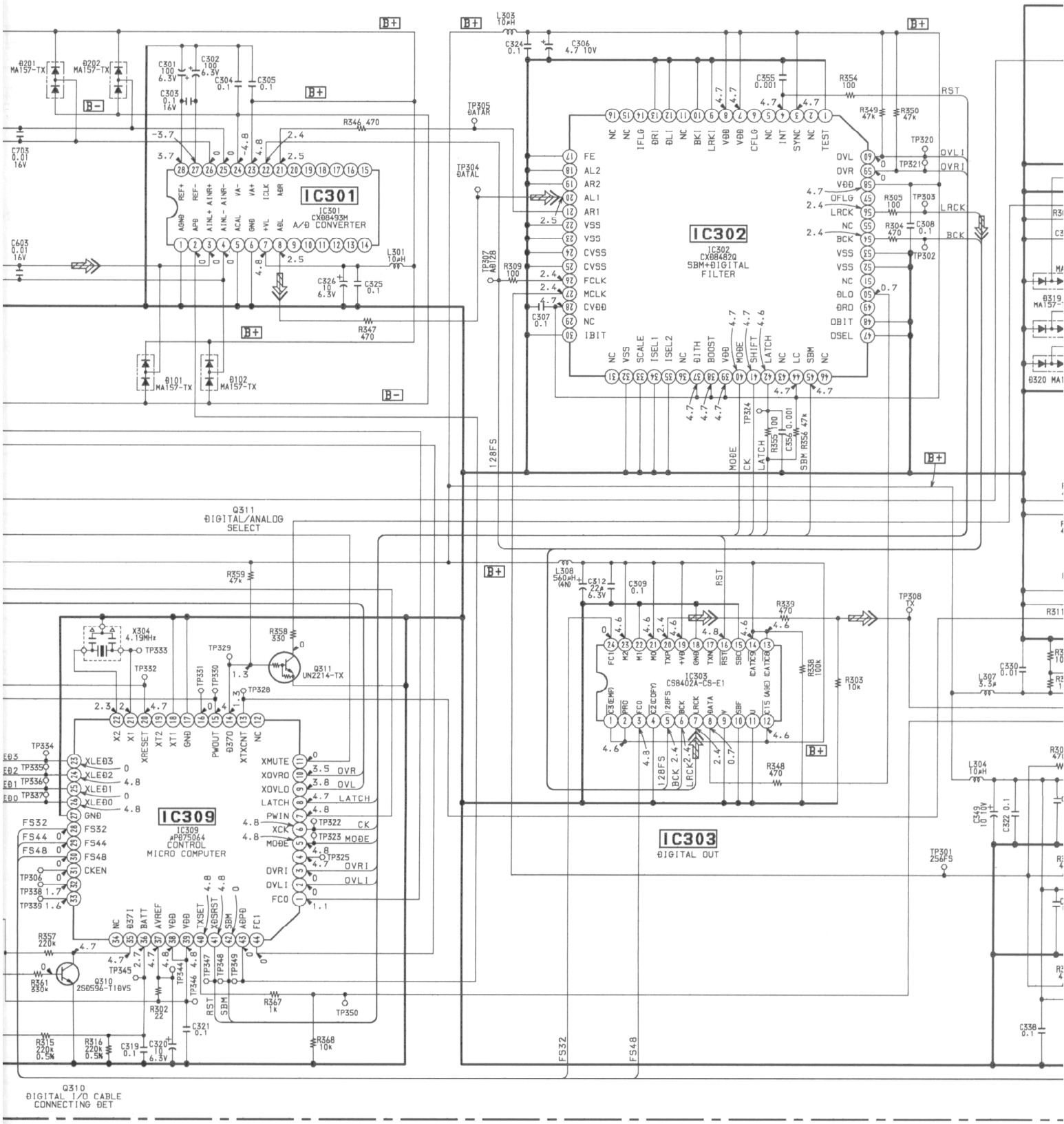


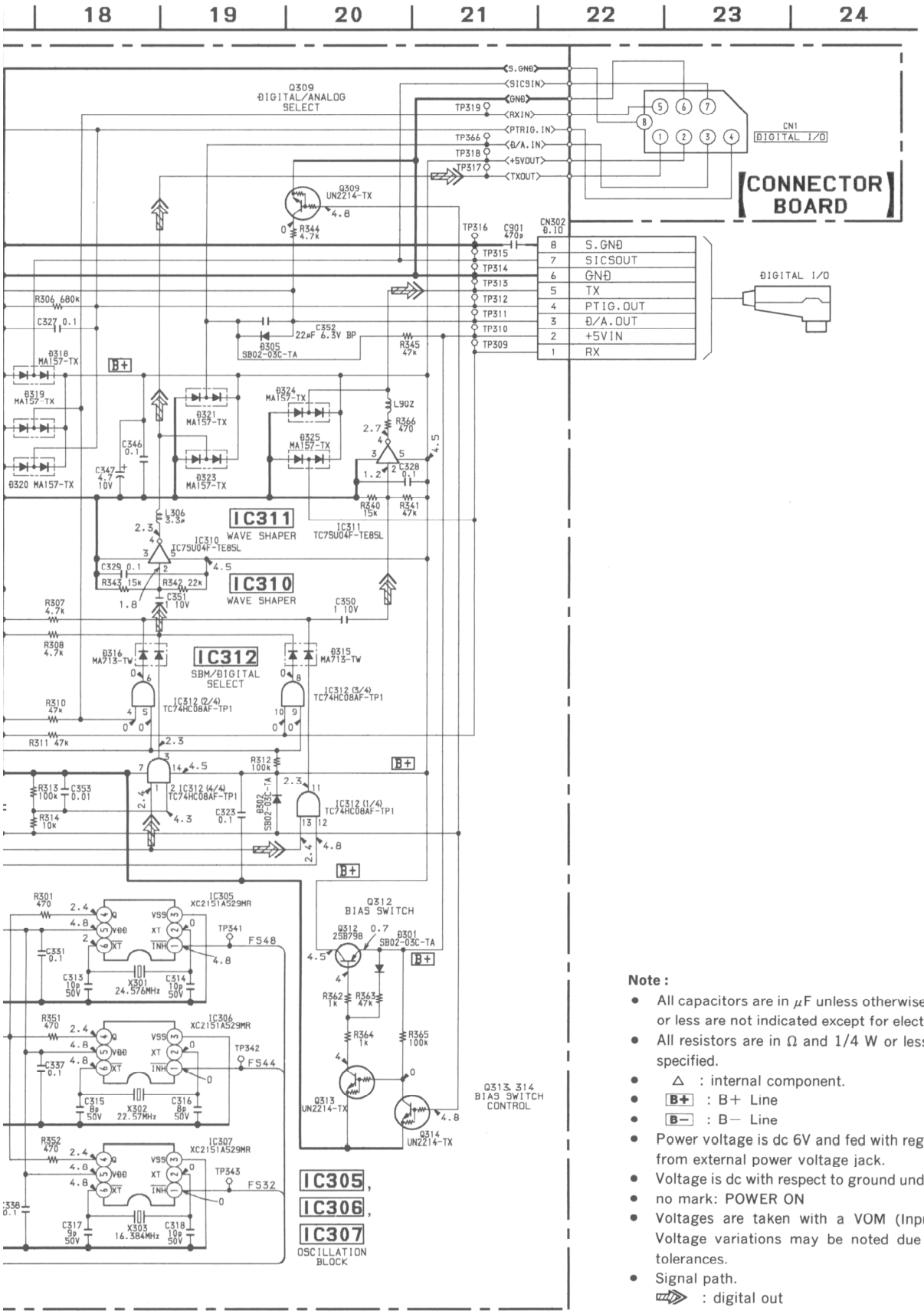
Note :

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line
- B− : B− Line
- Power voltage is dc 6V and fed with regulated dc power supply from external power voltage jack.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: POWER ON
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : digital out

3-4. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 30 for IC Block Diagrams.



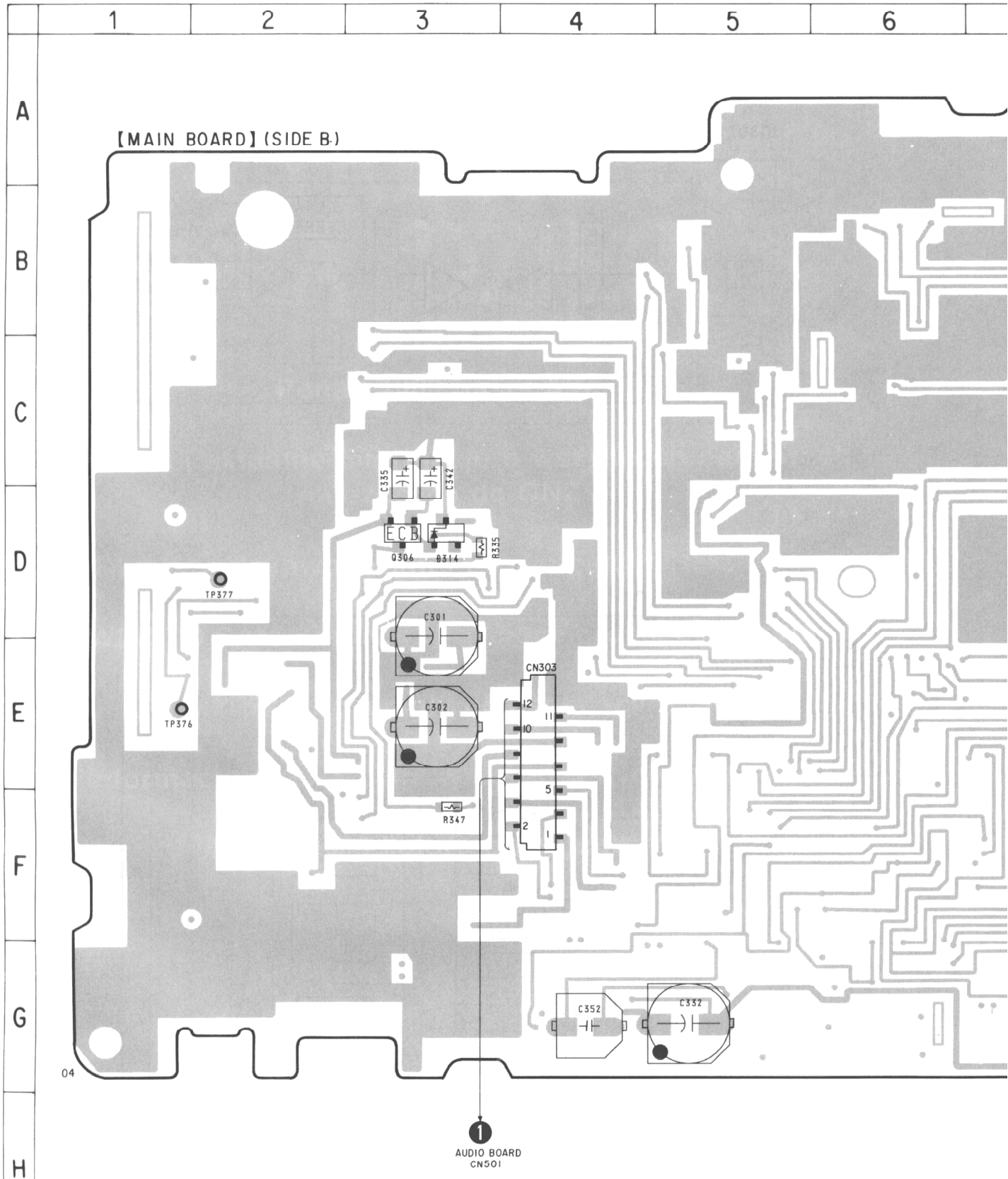

9
10
11
12
13
14
15
16
17
IC301
IC301
CX08493M
A/D CONVERTER
IC302
IC302
CX08482Q
SBM+DIGITAL
FILTER
IC303
DIGITAL OUT
IC309
IC309
μPD75064
CONTROL
MICRO COMPUTER
Q311
DIGITAL/ANALOG
SELECT
Q310
DIGITAL I/O CABLE
CONNECTING DET
B+
B-
RST
128FS
FS32
FS48
MODE
LATCH
LRCK
BCK

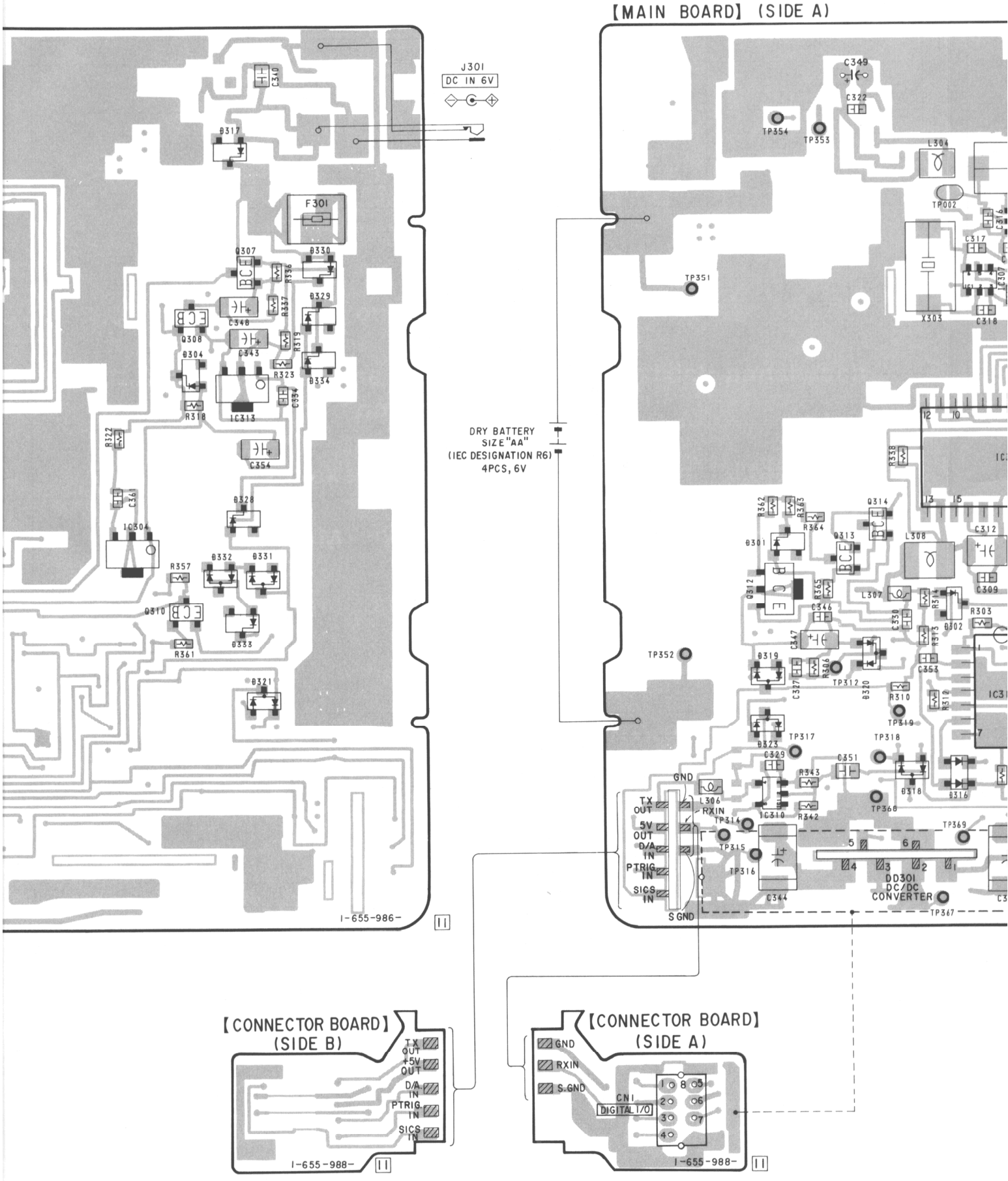


Note :

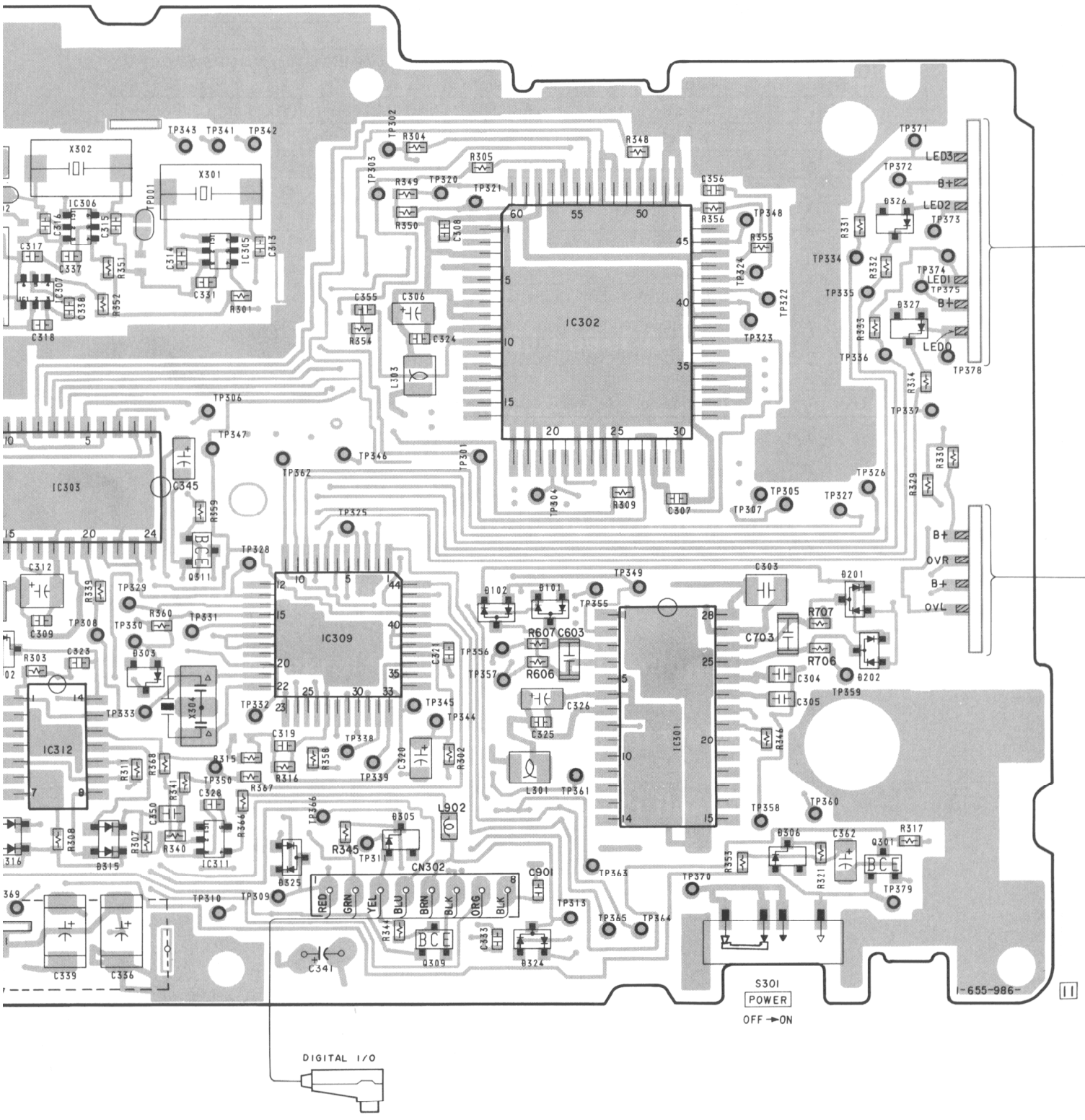
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- B− : B− Line
- Power voltage is dc 6V and fed with regulated dc power supply from external power voltage jack.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: POWER ON
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇒ : digital out

3-5. PRINTED WIRING BOARDS—MAIN SECTION—

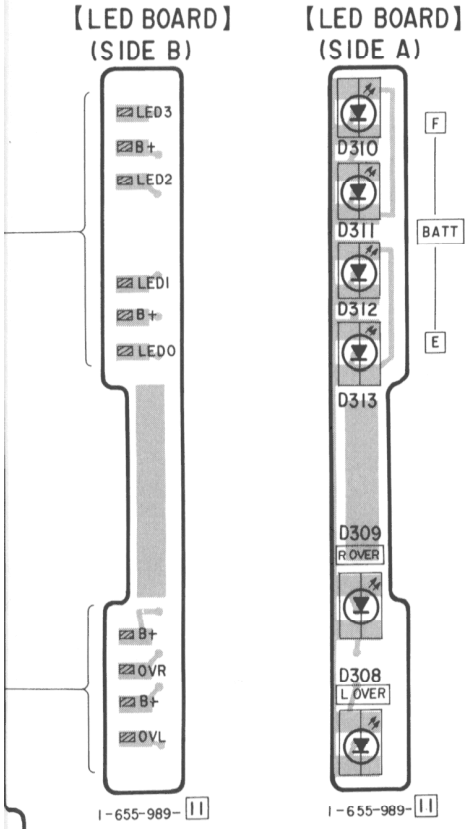



【MAIN BOARD】 (SIDE A)
J301
DC IN 6V
DRY BATTERY
SIZE "AA"
(IEC DESIGNATION R6)
4PCS, 6V
F301
IC313
IC304
IC310
L306
X303
DD301
DC/DC
CONVERTER
TX OUT
5V OUT
D/A IN
PTRIG IN
SICS IN
GND
RXIN
S.GND
1-655-986-
【CONNECTOR BOARD】
(SIDE B)
1-655-988-
【CONNECTOR BOARD】
(SIDE A)
CN1
DIGITAL I/O
1-655-988-

14	15	16	17	18	19	20



)	21	22



11

• Semiconductor Location

Ref. No.	Location
D101	E-17
D102	E-17
D201	E-19
D202	E-19
D301	E-12
D302	E-13
D303	E-14
D304	C-8
D305	F-16
D306	F-18
D308	E-22
D309	D-22
D310	B-22
D311	B-22
D312	C-22
D313	C-22
D314	D-3
D315	F-14
D316	F-14
D317	B-8
D318	F-13
D319	F-12
D320	F-13
D321	F-9
D323	F-12
D324	G-17
D325	F-15
D326	B-19
D327	C-19
D328	D-9
D329	C-9
D330	C-9
D331	E-9
D332	E-8
D333	E-9
D334	C-9
IC301	F-18
IC302	C-17
IC303	D-14
IC304	E-8
IC305	B-15
IC306	B-14
IC307	C-14
IC309	E-16
IC310	F-12
IC311	F-15
IC312	F-14
IC313	D-9
Q301	F-19
Q306	D-3
Q307	C-9
Q308	C-8
Q309	G-16
Q310	E-8
Q311	D-15
Q312	E-12
Q313	E-13
Q314	D-13

Note :

- O— : parts extracted from the component side.
- ▒▒ : Pattern on the side which is seen.
  (The other layer's patterns are not indicated.)

3-6. IC PIN DESCRIPTIONS

• SBM+Digital Filter (IC302 CXD8482Q)

Pin No.	Pin Name	I/O	Pin Description
1	TEST	I	Test input pin. "H" for test mode and "L" for normal mode. (Fixed at "L" level in this set.)
2	NC	—	Empty pin
3	SYNC	I	Sync mode setting pin. "H" for INT master mode and "L" for EXT slave mode.
4	INIT	I	A/D converter power down mode input from main microcomputer (IC309). ("H" active) (This IC is set OFF in digital input/output mode.)
5	NC	—	Empty pin
6	CFLG	O	FE calibration flag output (Not used in this set, empty pin.)
7, 8	VDD	—	Power supply pin (+5V)
9	LRKI	I	L/R clock input (Not used in this set, fixed at "L" level.)
10	BKI	I	Beat clock input (Not used in this set, fixed at "L" level.)
11	NC	—	Empty pin
12	DLI	I	L channel data input (Not used in this set, fixed at "L" level.)
13	DRI	I	R channel data input (Not used in this set, fixed at "L" level.)
14	IFLG	O	FE sync flag output (Not used in this set, empty pin.)
15, 16	NC	—	Empty pin
17	FE	I	FE select input (Not used in this set, fixed at "L" level.)
18	AL2	I	Data signal (L) input (Not used in this set, fixed at "L" level.)
19	AR2	I	Data signal (R) input (Not used in this set, fixed at "L" level.)
20	AL1	I	Data signal (L) input from A/D converter (IC301).
21	AR1	I	Data signal (R) input from A/D converter (IC301).
22, 23	VSS	—	GND
24, 25	CVSS	—	GND
26	FCLK	O	Output of 128fs master clock for FE to A/D converter (IC301).
27	MCLK	I	Input of 256fs master clock from FS clock generator (IC305—307).
28	CVDD	—	Power supply pin (+5V)
29	NC	—	Empty pin
30	IBIT	I	64fs input data mode select input ("H" : 4bit, "L" : 1bit) (Fixed at "L" level in this set.)
31	NC	—	Empty pin
32	VSS	—	GND
33	SCALE	I	Scale select input ("H" : ×4, "L" : ×5) (Fixed at "L" level in this set.)
34	ISEL1	I	FS select of input data (Fixed at "L" level in this set.)
35	ISEL2	I	FS select of input data (Fixed at "L" level in this set.)
36	NC	—	Empty pin
37	DITH	I	Dither control input. Dither active when "H" and stopped when "L". (Not used in this set, empty pin.)
38	BOOST	I	Boost control input. Boost active when "H" and normal when "L". (Fixed at "H" level in this set.)
39	VDD	—	Power supply pin (+5V)
40	MODE	I	Serial data signal input from main microcomputer (IC309).
41	SHIFT	I	Shift clock signal input from main microcomputer (IC309). (Shift when ↓, latch when ↑)
42	LATCH	I	Latch pulse signal input from main microcomputer (IC309).
43	NC	—	Empty pin
44	LC	I	Low cut control input. "H" for low frequency cut and "L" for flat. (Fixed at "H" level in this set.)
45	SBM	I	Super Bit Mapping (SBM) control input from main microcomputer (IC309). ("H" : ON, "L" : OFF)

Pin No.	Pin Name	I/O	Pin Description
46	NC	—	Empty pin
47	OSEL	I	FS select of data output. ("H" : 2FS output or EX mode, "L" : FS output) (Fixed at "L" level in this set.)
48	OBIT	I	Bit select of data output. ("H" : 24 bits, "L" : 16 bits) (Fixed at "L" level in this set.)
49	DRO	O	Write clock output (Not used in this set, empty pin.)
50	DLO	O	L/R channel data signal output
51	NC	—	Empty pin
52, 53	VSS	—	GND
54	BCK	I	Bit clock output to digital out interface (IC303).
55	NC	—	Empty pin
56	LRCK	I	L/R clock output to digital out interface (IC303).
57	OFLG	O	Outside sync flag output (Not used in this set, empty pin.)
58	VDD	—	Power supply pin (+5V)
59	OVR	O	R channel side overflow flag output (Not used in this set, empty pin.)
60	OVL	O	L channel side overflow flag output (Not used in this set, empty pin.)

• Control Microcomputer (IC309 μPD75064)

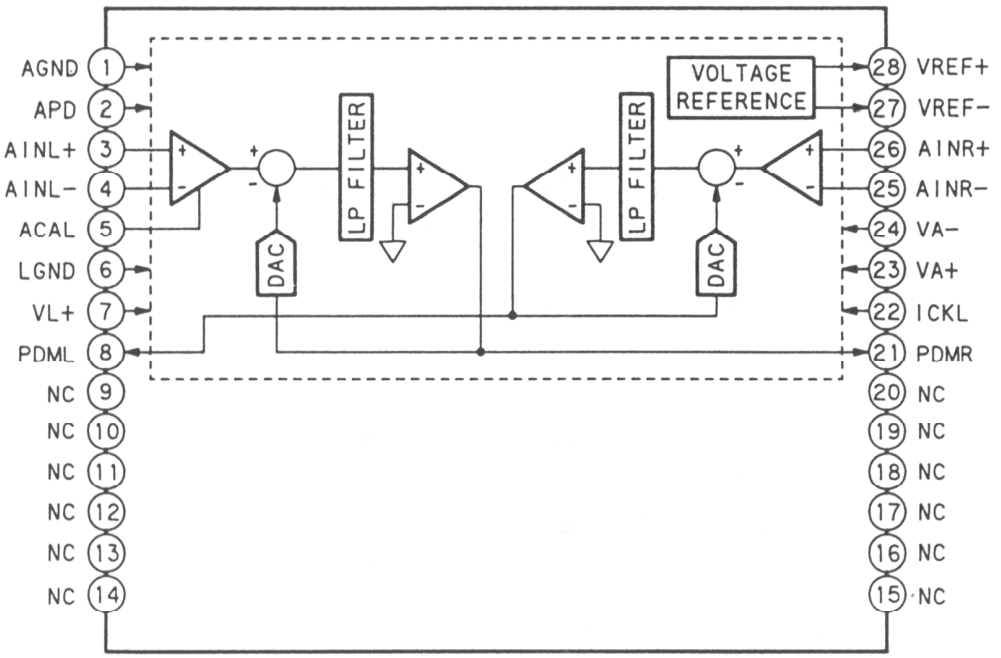
Pin No.	Pin Name	I/O	Pin Description
1	FC0*	I	FS select SW input. Refer to the lower table.
2	OVLI	I	Over flag input (L) from DSP. "H" for over detection.
3	OVRI	I	Over flag input (R) from DSP. "H" for over detection.
4	—	—	Not used.
5	MODE	O	MODE data output to DSP.
6	XCK	O	Clock output to DSP.
7	PWIN	I	POWER SW trigger input
8	LATCH	O	LATCH clock output to DSP.
9	XOVLO	O	OVER display LED (L). "L" for lights up.
10	XOVRO	O	OVER display LED (R). "L" for lights up.
11	XMUTE	O	Muting for monitor output. "H" for mute.
12	NC	—	No connection
13	XTXCNT	O	DIGITAL output select. At POWER ON : "L".
14	D37O	O	D3/D7 select output. "L" for D7.
15	PWOUT	O	D/D converter control. "H" for ON.
16	—	—	Not used.
17	GND	—	GND
18	XT1	—	Connect to GND.
19	XT2	—	Not used.
20	XRESET	I	Microcomputer reset input. "L" for reset.
21	X1	—	4.19MHz ceramic oscillator
22	X2	—	4.19MHz ceramic oscillator
23	XLED3	O	BATTERY display LED. "L" for lights up.
24	XLED2	O	BATTERY display LED. "L" for lights up.
25	XLED1	O	BATTERY display LED. "L" for lights up.
26	XLED0	O	BATTERY display LED. "L" for lights up.
27	GND	—	GND
28	FS32*	I/O	X'tal control. "H" for 16MHz ON. Refer to the lower table.
29	FS44*	I/O	X'tal control. "H" for 22MHz ON. Refer to the lower table.
30	FS48*	O	X'tal control. "H" for 24MHz ON. Refer to the lower table.
31	CKEN	O	Clock enable. "H" for enable.
32, 33	—	—	Not used.
34	NC	—	No connection
35	D37I	I	D3/D7 descrimination input. "+4V" and "+5V" for D7.
36	BATT	I	Battery voltage detection
37	AVREF	I	Reference voltage input
38, 39	VDD	—	Power supply (+5V)
40	TXSET	O	DIGITAL output select. At POWER ON : "H"
41	XDSRST	O	Reset of DSP IC and TX IC. "L" for reset.
42	SBM*	O	SBM ON/OFF. "H" for ON. Refer to the lower table.
43	ADPD	O	Power down of A/D modulator IC. "H" for power down.
44	FC1*	I	FS select SW input. Refer to the lower table.

* FS Control

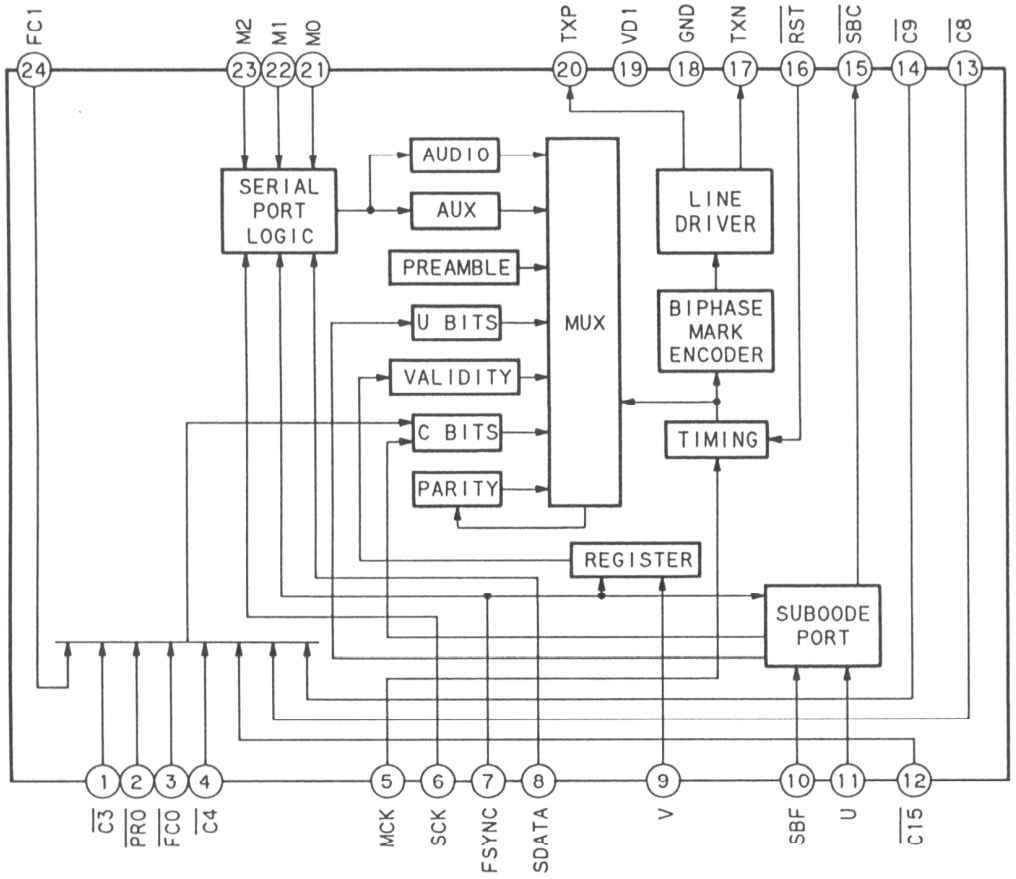
	FC0 (I)	FC1 (I)	FS48 (O)	FS44 (O)	FS32 (O)	SBM (O)
48kHz	L	H	H	L	L	H
44.1kHz	H	H	L	H	L	H
32kHz	H	L	L	L	H	L

• **IC Block Diagrams**

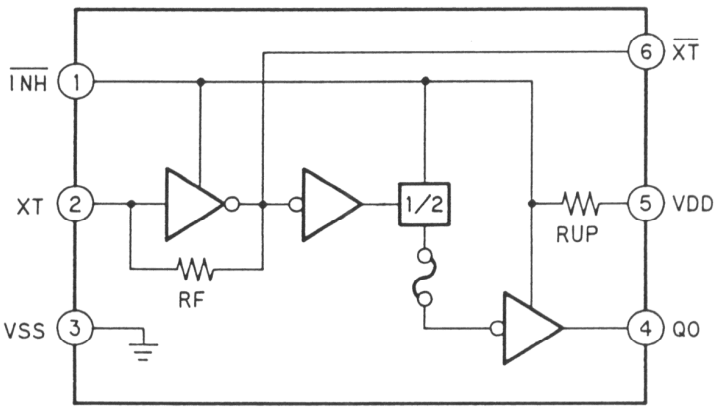
IC301 CXD8493M



IC303 CS8402A-CS-E1



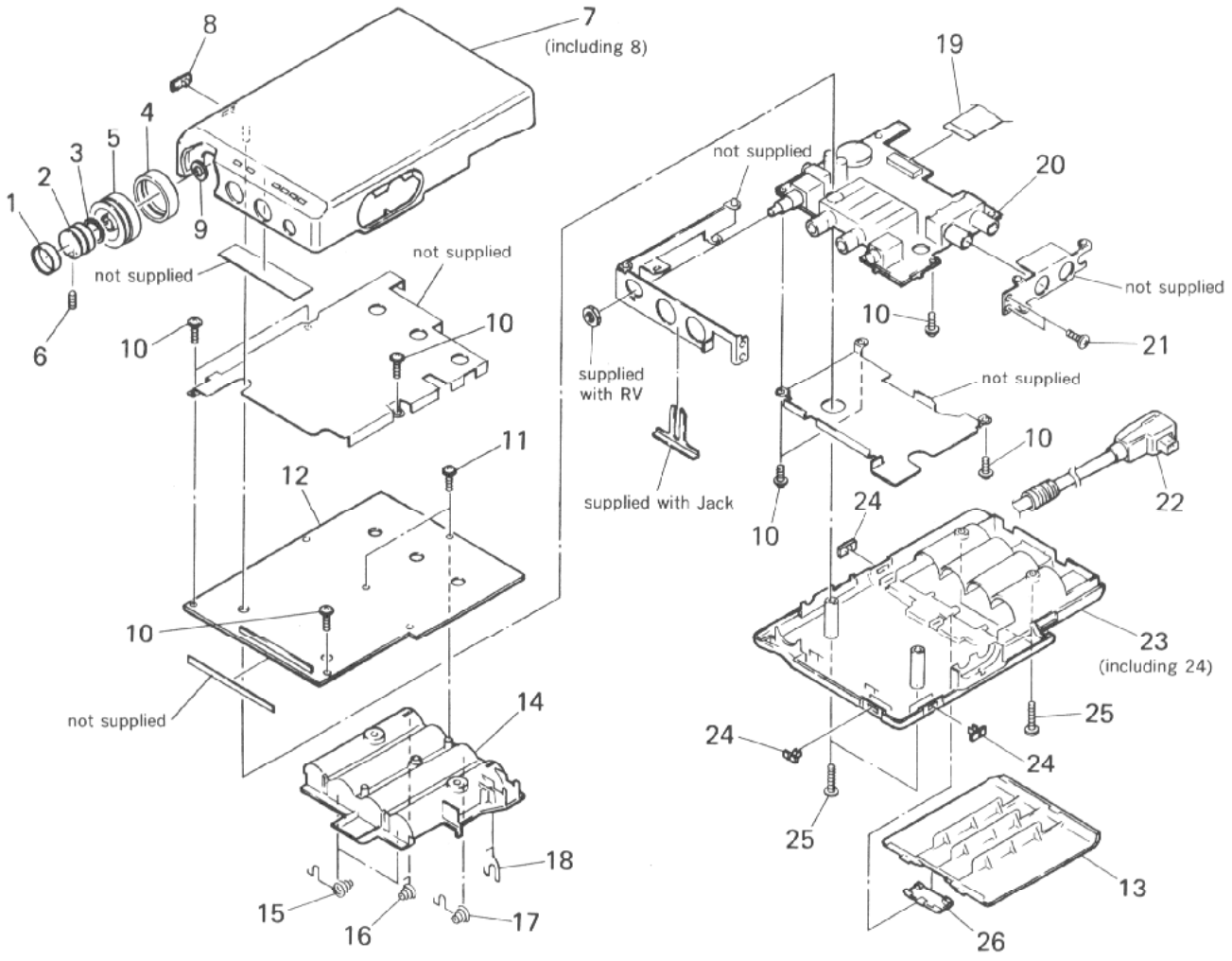
IC305—307 XC2151A529MR



SECTION 4
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  G : German model
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remark
1	4-973-078-01	KNOB (REC/R RING)	
2	4-973-072-01	KNOB (REC VOL R)	
3	3-344-904-01	RING, O	
4	4-973-076-01	KNOB (REC/L RING)	
5	4-973-073-01	KNOB (REC VOL L)	
6	7-621-721-06	SET-SCREW, SLOT 2X2.5FLAT POINT	
7	X-4945-879-1	CABINET (FRONT) ASSY	
8	4-973-075-01	KNOB (POWER)	
9	4-974-835-01	WASHER (REC VOL)	
10	3-335-797-01	SCREW (M1.4X2), TOOTHED LOCK	
11	3-318-201-31	SCREW (B) (1.4X5), TAPPING	
* 12	A-3276-722-A	MAIN BOARD, COMPLETE	
13	X-4945-881-2	LID ASSY, BATTERY CASE	
14	4-973-097-01	CASE, BATTERY	
15	4-973-101-01	TERMINAL (+/- A), BATTERY	
16	4-973-100-01	TERMINAL (-), BATTERY	
17	4-973-102-01	TERMINAL (+/- B), BATTERY	
18	4-973-099-01	TERMINAL (+), BATTERY	
19	1-769-596-11	CABLE, FLEXIBLE FLAT (12 CORE)	
* 20	A-3276-721-A	AUDIO BOARD, COMPLETE	
21	3-704-197-13	SCREW (M1.4X2.0), LOCKING	
22	1-769-572-12	CABLE (WITH CONNECTOR)	
23	X-4945-880-1	CABINET (REAR) ASSY	
24	4-973-074-01	KNOB (FS SELECTION)	
25	4-951-291-01	SCREW	
26	4-959-907-11	HINGE (BATTERY CASE LID)	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  G : German model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identifie
mark ⚠ or dotted line w
⚠ are critical for safe
Replace only with part n
specified.

Les composants identifié
marque ⚠ sont critiques
la sécurité.
Ne les remplacer que par
portant le numéro spécif

Ref.No.	Part No.	Description			Remark
*	A-3276-721-A	AUDIO BOARD, COMPLETE			
		**********			
	3-703-929-01	CUSHION (G)			
		< CAPACITOR >			
C102	1-162-950-11	CERAMIC CHIP	56PF	5% 50V	
C103	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C104	1-135-210-11	TANTALUM CHIP	4.7uF	20% 10V	
C105	1-162-950-11	CERAMIC CHIP	56PF	5% 50V	
C107	1-135-210-11	TANTALUM CHIP	4.7uF	20% 10V	
C108	1-135-166-21	TANTALUM CHIP	47uF	10% 10V	
C109	1-104-601-11	ELECT CHIP	10uF	20% 10V	
C111	1-162-950-11	CERAMIC CHIP	56PF	5% 50V	
C112	1-104-601-11	ELECT CHIP	10uF	20% 10V	
C113	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C150	1-104-601-11	ELECT CHIP	10uF	20% 10V	
C151	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C152	1-124-995-11	ELECT	220uF	20% 10V	
C153	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C154	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C202	1-162-950-11	CERAMIC CHIP	56PF	5% 50V	
C203	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C204	1-135-210-11	TANTALUM CHIP	4.7uF	20% 10V	
C205	1-162-950-11	CERAMIC CHIP	56PF	5% 50V	
C207	1-135-210-11	TANTALUM CHIP	4.7uF	20% 10V	
C208	1-135-166-21	TANTALUM CHIP	47uF	10% 10V	
C209	1-104-601-11	ELECT CHIP	10uF	20% 10V	
C211	1-162-950-11	CERAMIC CHIP	56PF	5% 50V	
C212	1-104-601-11	ELECT CHIP	10uF	20% 10V	
C213	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C250	1-104-601-11	ELECT CHIP	10uF	20% 10V	
C251	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C252	1-124-995-11	ELECT	220uF	20% 10V	
C253	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C254	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C501	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C502	1-104-852-11	TANTAL. CHIP	22uF	20% 6.3V	
C503	1-104-851-11	TANTAL. CHIP	10uF	20% 10V	
C504	1-104-851-11	TANTAL. CHIP	10uF	20% 10V	
C505	1-135-259-11	TANTAL. CHIP	10uF	20%	
C506-508					
	1-135-210-11	TANTALUM CHIP	4.7uF	20%	
C509	1-104-851-11	TANTAL. CHIP	10uF	20%	
C510	1-104-851-11	TANTAL. CHIP	10uF	20%	
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	
C512	1-104-852-11	TANTAL. CHIP	22uF	20%	
C513	1-135-210-11	TANTALUM CHIP	4.7uF	20%	
C514	1-135-210-11	TANTALUM CHIP	4.7uF	20%	
C515	1-162-927-11	CERAMIC CHIP	100PF	5%	
		< CONNECTOR >			
CN501	1-566-528-21	CONNECTOR, FPC (ZIF) 12P			
		< DIODE >			
D501	8-719-800-76	DIODE	1SS226		
D502	8-719-404-16	DIODE	MA713		
		< IC >			
IC501	8-759-330-74	IC	NJM2122M-TE2		
IC502	8-759-711-82	IC	NJM4580E		
IC503	8-759-981-82	IC	RC3414M		
IC504	8-759-710-55	IC	NJM2100M		
IC505	8-759-711-82	IC	NJM4580E		
		< JACK >			
J501	1-568-267-21	JACK (MIC PLUG IN POWER)			
J502	1-766-948-11	JACK (LARGE TYPE) (MIC)			
J504	1-580-441-21	JACK, PIN 2P (LINE IN)			
J505	1-562-975-41	JACK (Ω)			
		< COIL >			
L101	1-543-963-21	BEAD, FERRITE (CHIP)			
L102	1-543-963-21	BEAD, FERRITE (CHIP)			
L103	1-410-999-11	INDUCTOR CHIP	3.3uH		
L201	1-543-963-21	BEAD, FERRITE (CHIP)			
L202	1-543-963-21	BEAD, FERRITE (CHIP)			
L203	1-410-999-11	INDUCTOR CHIP	3.3uH		
L501-503					
	1-411-209-21	COIL, COMMON MODE CHOKE (SMD)			

AUDIO

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q501	8-729-159-65	TRANSISTOR 2SD596-DV5	
Q502	8-729-216-22	TRANSISTOR 2SA1162-G	
Q503	8-729-402-19	TRANSISTOR XN6501	
Q504	8-729-159-65	TRANSISTOR 2SD596-DV5	
Q505	8-729-402-78	TRANSISTOR XN6401	
Q506	8-729-159-65	TRANSISTOR 2SD596-DV5	
Q507	8-729-425-18	TRANSISTOR XN4504	
Q508	8-729-422-18	TRANSISTOR XN4315	
Q509	8-729-425-18	TRANSISTOR XN4504	
Q510	8-729-216-22	TRANSISTOR 2SA1162-G	
Q511	8-729-159-65	TRANSISTOR 2SD596-DV5	
		< RESISTOR >	
R101	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R102	1-218-692-11	METAL CHIP 1K 0.50% 1/16W	
R103	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R104	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R105	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R106	1-218-700-11	METAL CHIP 2.2K 0.50% 1/16W	
R107	1-218-692-11	METAL CHIP 1K 0.50% 1/16W	
R108	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R109	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R110	1-218-684-11	METAL CHIP 470 0.50% 1/16W	
R111	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R112	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R113	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R114	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R115	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R116	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R150	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R151	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R152	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R153	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R154	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R155	1-211-979-11	METAL CHIP 27 0.50% 1/16W	
R156	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R201	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R202	1-218-692-11	METAL CHIP 1K 0.50% 1/16W	
R203	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R204	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R205	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R206	1-218-700-11	METAL CHIP 2.2K 0.50% 1/16W	
R207	1-218-692-11	METAL CHIP 1K 0.50% 1/16W	
R208	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R209	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R210	1-218-684-11	METAL CHIP 470 0.50% 1/16W	
R211	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	

Ref. No.	Part No.	Description	Remark
R212	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R213	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R214	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R215	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R216	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R250	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R251	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R252	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R253	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R254	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R255	1-211-979-11	METAL CHIP 27 0.50% 1/16W	
R256	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R501	1-216-815-11	METAL CHIP 330 5% 1/16W	
R502	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R503	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R504	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R505	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R506	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R507	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R508	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R509	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R510	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R511	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R512	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R513-515	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R516-518	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R519	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R520	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R521	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R522	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R523	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R524	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R525	1-216-809-11	METAL CHIP 100 5% 1/16W	
R526	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
		< VARIABLE RESISTOR >	
RV501	1-223-879-12	RES, VAR, CARBON 50K/50K (REC LEVEL)	
RV502	1-223-874-11	RES, VAR, CARBON 10K/10K (VOL)	
		< SWITCH >	
S501	1-692-605-11	SWITCH, SLIDE (SAMPLING FREQ)	
S502	1-571-277-51	SWITCH, SLIDE (MIC ATT)	
S503	1-571-277-51	SWITCH, SLIDE (MIC/LINE IN)	

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Ref.No.	Part No.	Description			Remark
*	A-3276-722-A	MAIN BOARD, COMPLETE (INCLUDING CONNECTOR AND LED BOARDS) **********			
	1-769-596-11	CABLE, FLEXIBLE FLAT (12 CORE)			
	3-841-069-02	SPACER			
		< CAPACITOR >			
C301	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C302	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C303	1-137-306-11	FILM CHIP	0.1uF	5%	16V
C304	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C305	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C306	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C307-309					
	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C312	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C313	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C314	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C315	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C316	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C317	1-162-914-11	CERAMIC CHIP	9PF	0.5PF	50V
C318	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C319	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C320	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C321-325					
	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C326	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C327-329					
	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C331	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C332	1-126-204-11	ELECT CHIP	47uF	20%	16V
C333	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C334	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C335	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C336	1-104-753-11	TANTAL. CHIP	47uF	20%	6.3V
C337	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C338	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C339	1-135-161-21	TANTALUM CHIP	22uF	10%	10V
C340	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C341	1-126-925-11	ELECT	470uF	20%	10V
C342	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C343	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C344	1-135-161-21	TANTALUM CHIP	22uF	10%	10V
C345	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C346	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C347	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C348	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C349	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C350	1-164-234-11	CERAMIC CHIP	1uF		10V
C351	1-164-234-11	CERAMIC CHIP	1uF		10V
C352	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C353	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C354	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C355	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C356	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C361	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C362	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C603	1-137-294-11	FILM CHIP	0.01uF	5%	16V
C703	1-137-294-11	FILM CHIP	0.01uF	5%	16V
C901	1-126-962-11	CERAMIC CHIP	470PF	10%	50V
		< CONNECTOR >			
CN1	1-750-377-11	SOCKET, CONNECTOR 7P (DIGITAL I/O)			
CN302	1-770-662-11	PIN, CONNECTOR 8P			
* CN303	1-573-985-21	CONNECTOR, FPC/FFC 12P			
		< DIODE >			
D101	8-719-800-76	DIODE 1SS226			
D102	8-719-800-76	DIODE 1SS226			
D201	8-719-800-76	DIODE 1SS226			
D202	8-719-800-76	DIODE 1SS226			
D301	8-719-975-43	DIODE RB420D			
D302	8-719-975-43	DIODE RB420D			
D303	8-719-975-43	DIODE RB420D			
D304	8-719-975-43	DIODE RB420D			
D305	8-719-975-43	DIODE RB420D			
D306	8-719-975-43	DIODE RB420D			
D308	8-719-038-35	LED CL-181UR-C-TU (L OVER)			
D309	8-719-038-35	LED CL-181UR-C-TU (R OVER)			
D310	8-719-038-35	LED CL-181UR-C-TU (BATT)			
D311	8-719-038-35	LED CL-181UR-C-TU (BATT)			
D312	8-719-038-35	LED CL-181UR-C-TU (BATT)			
D313	8-719-038-35	LED CL-181UR-C-TU (BATT)			
D314	8-719-105-91	DIODE RD5.6M-B2			
D315	8-719-404-16	DIODE MA713			
D316	8-719-404-16	DIODE MA713			
D317	8-719-980-38	DIODE SB07-03C			
D318	8-719-800-76	DIODE 1SS226			
D319	8-719-800-76	DIODE 1SS226			
D320	8-719-800-76	DIODE 1SS226			
D321	8-719-800-76	DIODE 1SS226			
D323	8-719-800-76	DIODE 1SS226			
D324	8-719-800-76	DIODE 1SS226			
D325	8-719-800-76	DIODE 1SS226			
D326	8-719-975-43	DIODE RB420D			
D327	8-719-975-43	DIODE RB420D			
D328	8-719-975-43	DIODE RB420D			

MAIN

Ref. No.	Part No.	Description	Remark
D329	8-719-975-43	DIODE RB420D	
D330	8-719-980-38	DIODE SB07-03C	
D331	8-719-800-76	DIODE 1SS226	
D332	8-719-800-76	DIODE 1SS226	
D333	8-719-975-43	DIODE RB420D	
D334	8-719-975-43	DIODE RB420D	
		< DC/DC CONVERTER >	
DD301	1-473-101-11	CONVERTER UNIT, DC/DC	
		< TEMP. FUSE >	
F301	1-810-792-11	SWITCH, POLYETHYLENE	
		< IC >	
IC301	8-759-330-53	IC CXD8493M-E1	
IC302	8-759-196-21	IC CXD8482Q	
IC303	8-759-330-78	IC CS8402A-CS-E1	
IC304	8-759-178-29	IC RH5VA33AA-T1	
IC305	8-759-330-76	IC XC2151A529MR	
IC306	8-759-330-76	IC XC2151A529MR	
IC307	8-759-330-76	IC XC2151A529MR	
IC309	8-759-338-76	IC uPD75064GB-507-3B4	
IC310	8-759-243-19	IC TC7SU04F	
IC311	8-759-243-19	IC TC7SU04F	
IC312	8-759-925-76	IC SN74HC08ANS	
IC313	8-759-178-29	IC RH5VA33AA-T1	
		< JACK >	
J301	1-750-849-11	JACK, EXTERNAL POWER (DC IN 6V)	
		< COIL >	
L301	1-412-137-11	INDUCTOR 10uH	
L303	1-412-137-11	INDUCTOR 10uH	
L304	1-412-137-11	INDUCTOR 10uH	
L306	1-410-999-11	INDUCTOR CHIP 3.3uH	
L307	1-410-999-11	INDUCTOR CHIP 3.3uH	
L308	1-412-245-51	INDUCTOR 560uH	
L902	1-414-551-11	MICRO INDUCTOR (CHIP TYPE)	
		< TRANSISTOR >	
Q301	8-729-900-52	TRANSISTOR DTC114YK	
Q306	8-729-216-22	TRANSISTOR 2SA1162-G	
Q307	8-729-216-22	TRANSISTOR 2SA1162-G	
Q308	8-729-900-52	TRANSISTOR DTC114YK	
Q309	8-729-900-52	TRANSISTOR DTC114YK	
Q310	8-729-159-65	TRANSISTOR 2SD596-DV5	
Q311	8-729-900-52	TRANSISTOR DTC114YK	
Q312	8-729-101-07	TRANSISTOR 2SB798-DL	
Q313	8-729-900-52	TRANSISTOR DTC114YK	
Q314	8-729-900-52	TRANSISTOR DTC114YK	
		< RESISTOR >	
R301	1-216-817-11	METAL CHIP 470 5% 1/16W	
R302	1-216-801-11	METAL CHIP 22 5% 1/16W	
R303	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R304	1-216-817-11	METAL CHIP 470 5% 1/16W	
R305	1-216-809-11	METAL CHIP 100 5% 1/16W	
R306	1-216-855-11	METAL CHIP 680K 5% 1/16W	
R307	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R308	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R309	1-216-809-11	METAL CHIP 100 5% 1/16W	
R310	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R311	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R312	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R313	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R314	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R315	1-218-748-11	METAL CHIP 220K 0.50% 1/16W	
R316	1-218-748-11	METAL CHIP 220K 0.50% 1/16W	
R317	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R318	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R319	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R321	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R322	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R323	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R329	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R330	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R331	1-216-817-11	METAL CHIP 470 5% 1/16W	
R332	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R333	1-216-817-11	METAL CHIP 470 5% 1/16W	
R334	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R335	1-216-817-11	METAL CHIP 470 5% 1/16W	
R336	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R337	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R338	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R339	1-216-817-11	METAL CHIP 470 5% 1/16W	
R340	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R341	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R342	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R343	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R344	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R345	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R346-348	1-216-817-11	METAL CHIP 470 5% 1/16W	
R349	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R350	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R351	1-216-817-11	METAL CHIP 470 5% 1/16W	

Ref. No.	Part No.	Description			Remark
R352	1-216-817-11	METAL CHIP	470	5%	1/16W
R353	1-216-833-11	METAL CHIP	10K	5%	1/16W
R354	1-216-809-11	METAL CHIP	100	5%	1/16W
R355	1-216-809-11	METAL CHIP	100	5%	1/16W
R356	1-216-841-11	METAL CHIP	47K	5%	1/16W
R357	1-216-849-11	METAL CHIP	220K	5%	1/16W
R358	1-216-815-11	METAL CHIP	330	5%	1/16W
R359	1-216-841-11	METAL CHIP	47K	5%	1/16W
R360	1-216-833-11	METAL CHIP	10K	5%	1/16W
R361	1-216-851-11	METAL CHIP	330K	5%	1/16W
R362	1-216-821-11	METAL CHIP	1K	5%	1/16W
R363	1-216-841-11	METAL CHIP	47K	5%	1/16W
R364	1-216-821-11	METAL CHIP	1K	5%	1/16W
R365	1-216-845-11	METAL CHIP	100K	5%	1/16W
R366	1-216-817-11	METAL CHIP	470	5%	1/16W
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W
R368	1-216-833-11	METAL CHIP	10K	5%	1/16W
R606	1-218-660-11	METAL CHIP	47	0.50%	1/16W
R607	1-218-660-11	METAL CHIP	47	0.50%	1/16W
R706	1-218-660-11	METAL CHIP	47	0.50%	1/16W
R707	1-218-660-11	METAL CHIP	47	0.50%	1/16W
		< SWITCH >			
S301	1-572-498-11	SWITCH, SLIDE (POWER)			
		< VIBRATOR >			
X301	1-579-922-11	VIBRATOR, CRYSTAL (CHIP TYPE) (24.576MHz)			
X302	1-579-870-21	VIBRATOR, CRYSTAL (22.57MHz)			
X303	1-760-608-21	VIBRATOR, CHIP CRYSTAL (16.384MHz)			
X304	1-579-063-21	VIBRATOR, CERAMIC (4.19MHz)			
		MISCELLANEOUS			
22	1-769-572-12	CABLE (WITH CONNECTOR)			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
⚠	1-467-510-21	ADAPTOR, AC (AC-MZ60) (US, Canadian)	
⚠	1-467-511-11	ADAPTOR, AC (AC-MZ60) (AEP, G)	
⚠	1-467-512-11	ADAPTOR, AC (AC-MZ60) (UK)	
⚠	1-467-514-21	ADAPTOR, AC (AC-MZ60) (E)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (E)	
	3-798-369-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, GERMAN) (AEP, G, E)	
	3-798-369-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, Canadian, UK)	
	3-798-369-41	MANUAL, INSTRUCTION (DUTCH, PORTUGUESE, SWEDISH, ITALIAN) (AEP, G)	
	4-973-048-01	CASE, CARRYING	
*	4-974-495-01	CUSHION	
*	4-974-497-01	INDIVIDUAL CARTON	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.